JUL 9 1928

Old Series, Vol. LIII | CONTINUATION OF THE BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB | New Series, Vol. XLV

The Auk

A Quarterly Journal of Ornithology

Vol. XLV JULY, 1928 No. 3

PUBLISHED BY

The American Ornithologists' Union

LANCASTER, PA.

Entered as second-class mail matter in the Post Office at Lancaster, Pa.

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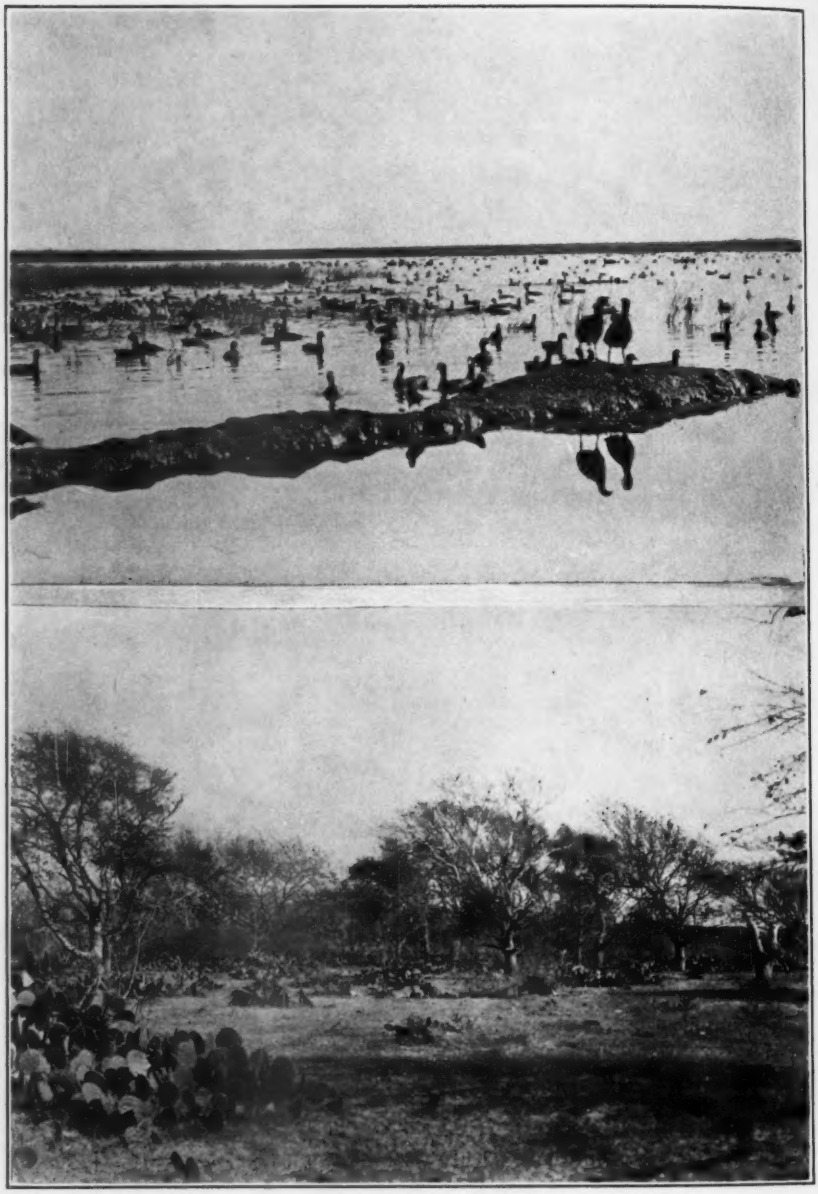

UPPER: COOTS NEAR CHENIER.
LOWER: TYPICAL VIEW ALONG THE SEA RIDGE, CHENIER AU TIGRE, LA.

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ORNITHOLOGY.

VOL. XLV. JULY, 1928. No. 3.

NOTES ON THE WINTER BIRDS OF CHENIER AU TIGRE, LOUISIANA.

BY ALFRED M. BAILEY.

Plates VIII–X

CHENIER AU TIGRE is, as the name indicates, an oak-grown ridge, situated on the gulf coast of Louisiana. It is an isolated spot, being fifty miles or more from a railroad, the traveller winding down the picturesque Bayou Vermillion by boat from Abbeville (on the Southern Pacific), or from Avery Island via the Salt Mine Bayou to Vermillion Bay, and then southward down miles of narrow channels through the marshland to the Gulf of Mexico. The Chenier is now easily accessible, for deep canals have been dug, and as a good summer camp has been established, it will probably become a popular resort.

The ridge proper is about five miles in length, and anywhere from a few acres to half a mile in width. Vegetation flourishes, and among the common trees are the majestic moss-hung oaks, which have been storm-whipped for generations, prickly ash, locust, ironwood, hackberry, chinaberry, red haw and mesquite (Acacia),—as well as almost impenetrable growths of palmetto, prickly pear and tough-limbed shrubs. Sandy beaches extend along the Gulf, with extensive mud flats at the western end, while open marshland is on all sides, except for the Gulf of Mexico to the south; it is a wonderful place for wild life, and at no time of the year is it without its hosts of birds. In the spring, the mi-

grating hordes cross the Gulf from South and Central America, and rest a few days along the Chenier before continuing their northward journey, and again, in the fall, there are great numbers working along the ridge, gaining strength preparatory to their long flight across the water. The summer period is full of interest because of the nesting birds which are so abundant; while winter time, though there are fewer species than at any other season, is just as interesting because of the northern birds which crowd the marshland. Many thousand acres have been set aside in this region as permanent wild life sanctuaries,—the Rockefeller Foundation to the west, Marsh Island to the east, the Audubon (Paul Rainey), and the Ward-McIlhenny and State Wild Life Reservations to the northward. The Louisiana Land Co. has extensive holdings, and aside from the few members who shoot upon their land, no hunting is allowed. The marsh surrounding the Chenier is typical of the southern country, with great fields of cane along the higher ridges; tules and cattails growing in profusion, as well as marsh grasses which often provide excellent forage for cattle. Broad lagoons are the favorite haunts of different water birds, while many perching forms are found upon the grass-grown ridges.

I have made several trips to Chenier au Tigre at all seasons of the year, but up to this time I did not have an opportunity to make a careful study of the winter birds. I spent December 8 to 18, 1925, along the ridge in the interests of the Colorado Museum of Natural History, and was able to make rather complete notes on the forms wintering there. An unusual scarcity of Herons and other water birds was doubtlessly caused by the drouth which prevailed for nearly a year, with a consequent destruction of animal and plant life upon which the birds feed. Although I have observed many species on the Chenier on former trips, not seen at this time, I am limiting this article to species noted during the period stated above (with one exception). In case of doubt as to the identification of a bird, the specimen was collected, and whenever I have been in doubt as to the subspecies, I have so indicated. One or two Sparrows were observed with which I was unfamiliar, and in addition to these, many forms were undoubtedly overlooked. I am sure that any ornithologist could add a dozen species

to the list during the same period. The birds are constantly shifting from one area to another, in their search for food, and so, there may be a scarcity one day, while the birds will be very plentiful the next.

There is a small settlement on the Chenier, and the collector will find the people hospitable and willing to aid him in his work. Boats run from Abbeville on more or less regular schedule in summer, and I believe the Chenier will prove an easily accessible and an interesting place for other ornithologists to visit. As mentioned above, there is a small hotel where one is made very comfortable at a minimum charge.

I am indebted to Mr. Stanley C. Arthur who kindly arranged for the necessary collecting permits, to Mr. E. A. McIlhenny for permission to collect upon his land and that of the Louisiana Land Co., and for many other courtesies, and to Mr. and Mrs. Sagrera for their help upon the Chenier. To Mr. J. D. Figgins, Director of the Colorado Museum of Natural History, I am indebted for the opportunity to again work upon the Chenier.

Podilymbus podiceps. PIED-BILLED GREBE.—These little Grebes were never common around the Chenier. One was seen in the upper canal December 10.

Larus argentatus. HERRING GULL.—Water birds were scarce, and only half a dozen individuals of this species were noted, straggling along the beach. There were a great many Gulls offshore December 14, when a "norther" exposed the mud flats, but they were too far away to identify. This species is fairly common in the spring.

Larus delawarensis. RING-BILLED GULL.—Fairly common along the beach. On December 12 while riding west along the ridges, we saw fully two hundred birds cruising against the wind.

Larus atricilla. LAUGHING GULL.—Usually abundant along the Chenier, but I saw less than twenty-five individuals. They worked the beaches singly, or a few at a time.

Sterna maxima. ROYAL TERN.—A few were seen over the marsh, a couple of miles north of the Chenier, and others noted daily over the extensive mud flats. They were not common. I thought I recognized *Sterna caspia* also, but the birds were not near enough for positive identification. Both forms are common in the spring.

Sterna forsteri. FORSTER'S TERN.—This little Tern, usually abundant in the vicinity, was very scarce. A few were seen over East Chenier Lakes on December 8, and again on December 15. An occasional bird was seen over the Gulf.

Phalacrocorax auritus auritus. DOUBLE-CRESTED CORMORANT.—Usually a very common winter bird. I saw a few individuals daily, as they cruised by, far offshore.

Pelecanus erythrorhynchos. WHITE PELICAN.—A few were noted daily over the marsh, where they fed on small fish, or in passage over the Gulf. Large flocks were often seen in the evening, skirting the beach, as they flew from the westward. They are beautiful in flight, and were it not for the Pelicans, white and brown, the beaches would be lonesome places, for these birds return to their roosting bars long after the others have settled for the night.

Pelecanus occidentalis. BROWN PELICAN.—This is a common bird along the Gulf coast, and from a dozen to one hundred could be seen daily near the Chenier.

Lophodytes cucullatus. HOODED MERGANSER.—These little fellows are usually met in some small bayou, near large bays. I saw but one bird—in the east canal December 8.

Anas platyrhynchos. MALLARD.—Mallards were very common, and were seen daily in the marsh surrounding the Chenier. While they were often in flocks, they were usually in pairs, and would be jumped from their feeding grounds when I walked the marsh.

Anas fulvigula maculosa. MOTTLED DUCK.—"Southern Mallards" were common, especially near West Chenier Lakes. As with the above species, these birds were mated, and although several were often seen together, the flock would usually split and the paired birds would go their own way. They are expert divers, and crippled birds are almost sure to escape in the grass. They nest commonly near the Chenier in late May.

Chaulelasmus streperus. GADWALL.—Very common. This bird was noted daily in the marsh, usually in large flocks.

Mareca americana. BALDPATE.—Widgeons are usually not uncommon, but I saw very few on this trip. Possibly a dozen birds were seen Dec. 8, and a few more the 15th.

Nettion carolinense. GREEN-WINGED TEAL.—

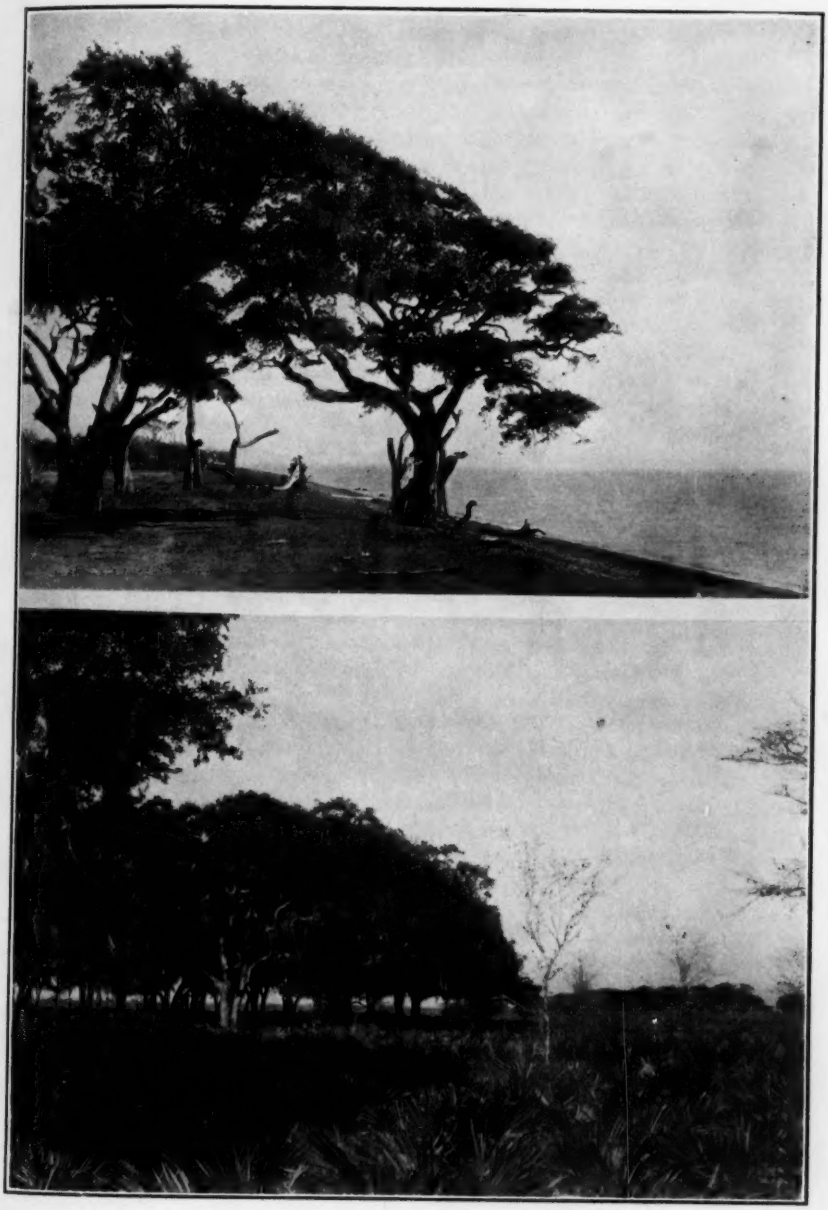
Querquedula discors. BLUE-WINGED TEAL.—Both species of Teal were common in the marsh, and often times both were found in the same flock. In the spring, they assemble in great bands.

Spatula clypeata. SHOVELLER.—Very common. This species was noted daily.

Dafila acuta tzitzihoa. PINTAIL.—Common. They were often observed in large flocks.

Aix sponsa. WOOD DUCK.—This form does not commonly range near the Chenier, as it prefers the ponds near the cypress swamps. I saw a female killed by a boy in the canal back of the oak ridge. He did not know what he had killed. It is the only one I have ever seen in that locality.

Marila americana. REDHEAD.—Uncommon. I saw a few specimens



UPPER: BEACH VIEW ON THE CHENIER.
LOWER: PENINSULA OF LIVE OAKS, WITH MARSH IN THE DISTANCE.

killed by the hunters at the Club, but did not see any in life. They are often seen on Belle Isle Lake, a few miles farther north.

Marila valisineria. CANVAS-BACK.—They are fairly abundant, especially on the West Chenier Lakes, where they secure food to their liking. They are often seen in flight, and a few are taken by the hunters from the Club.

Marila affinis. LESSER SCAUP DUCK.—These little Ducks were very common on the larger marsh ponds. They sometimes occur in enormous flocks.

Chen hyperboreus hyperboreus. SNOW GEESE.—These Geese are not common on the Chenier, their range being farther to the westward along the Sabine river. A few birds occured with the Blue Geese, possibly one in one hundred birds. I took two specimens, one an adult male, the other a bird-of-the-year. On December 18 as I was leaving the Chenier, I saw a flock of twenty or more, without the usual convoy of Blue Geese.

Chen caerulescens. BLUE GOOSE.—This is an extremely common species. I believe the bulk of all the Blue Geese winter in that section, working from Marsh Island along the shores of Vermillion Bay and westward to the Rockefeller Foundation. The birds have two favorite haunts, the "pasture," a grass grown prairie just west of Chenier au Tigre, and a great marshy area on the Audubon preserve. They usually work between these two points, and one can almost be certain of a morning and evening flight of Geese, to and from these places; if they spend the night on the ponds of the pasture, they are almost sure to take wing about eight in the morning for the Audubon preserve, where they feed upon grass roots. The big flocks literally tear up the prairie, and often spoil acres of pasturage. It is a wonderful sight to see the Blue Geese in flight. The morning of December 9, I rode out into the pasture in the hope of collecting a few birds. It was very early as we splashed across the wet prairie, and listened for the call of Geese. Nothing was heard but the resonant quack of Mallards. Then far to the northeast we heard the first quavering notes, and then as time passed, the calls became more distinct—a perfect bedlam of Goose clamor. They were flying in regular V formation, flock after flock trailing one another at intervals of one hundred yards or more. When the vanguard reached their favorite pond, there was a different note, one of anxiety apparently, and the birds circled, still high in the heavens. Other birds joined the circling flock as they gradually lowered, making a great funnel-shaped mass as they slowly descended. It may have been my imagination, but I thought that although the different V's were soon as one, that the big flock was made up of hundreds of family groups. It seemed that instead of a great band of hundreds of individuals, that it was composed of hundreds of groups, each little unit, three, four, five, as the case may be, being distinct. As the first birds alighted in safety, the others poured from the sky, faster and faster until all had settled—a field of snowy heads showing above the marsh grass. The flock was composed of both adult and young

birds. Such a band, consisting of several thousand individuals, can be heard for miles when the wind is favorable.

The Blue Geese begin to appear at the Chenier in late October, and most of them have arrived by the middle of November. They remain in the same general vicinity the entire winter, beginning to leave in April for the far north. I have seen a good many birds on the Chenier as late as May 15.

The future of the Blue Goose looks bright, for no hunting is allowed on the different reservations, and a warden lives on the Chenier to keep poachers from the pasture. In passing from their evening resting place to their feeding grounds, the birds fly so high that few are killed.

Blue Geese are fairly common at the mouth of the Mississippi river and along the Gulf to the eastward, but as I have said, the country from Marsh Island westward seems to be their chief wintering ground.

Anser albifrons gambeli. WHITE-FRONTED GOOSE.—I saw one little band of eight December 16, over West Chenier Lakes. They are uncommon near the Chenier, their main range being to the westward. They are often abundant in Cameron Parish.

Dendrocygna bicolor. FULVOUS TREE-DUCK.—These interesting birds proved to be abundant in the marsh, and a good series was collected. There were a few about the Chenier during the spring of 1918, but I never found them in winter before.

The "Mexican squealer," as he is locally known, gets his name from the peculiar whistling note which he makes in flight, or while at rest. They are very conspicuous on the wing, moving slowly, in mass formation, with legs visible behind the tail, and head and neck outstretched—looking almost like Glossy Ibises. They appear black when upon the wing, and anyone at all familiar with the species could not fail to recognize them. I had been told that several thousand birds had been staying in the vicinity of the Chenier all fall, and there were at least five hundred at the time of my visit. They were rather tame, and easily bagged by gunners, although the crippled birds are adepts at diving. In the distance, a large flock of these ducks looks not unlike an immense swarm of Boat-tailed Grackles.

Plegadis guarauna. WHITE-FACED GLOSSY IBIS.—This species is usually abundant during the winter months, but the marshmen told me the birds had been unusually scarce, doubtlessly due to the lack of crayfish in the marsh. I saw but two birds, in flight back of the Chenier, December 12.

Ardea herodias subspecies. GREAT BLUE HERON.—Very common. I did not collect specimens, but it is probable that both the Great Blue and Ward's Herons were present.

Casmerodius egretta. EGRET.—The large Egrets were fairly common, and a dozen or more could be seen from the canal at any time. They winter along the ridges, often alighting in the trees. Many years ago, these birds were extremely abundant and were used as bait for the traps—a practice which has long since been discontinued.

Egretta candidissima candidissima. SNOWY EGRET.—These beautiful little Herons are familiar features of the "marshscape," and I know nothing more striking than a flock fishing in some shallow, tule-bordered lagoon. They are to be found near the Chenier the year around, and usually are more abundant than I found them this year. I do not know of any nesting colony near the ridge, and have never found them nesting in cane as they do in the salt marshes of Utah. These birds were remarkably tame, and are never molested.

Florida caerulea. LITTLE BLUE HERON.—There were very few of these Herons about, the only ones noted being along a little tidal stream, on the flat near the west end of the Chenier. Half a dozen birds hung about this place, and were noted daily. They were very tame and would allow us to ride close to them.

Nycticorax nycticorax naevius. BLACK-CROWNED NIGHT HERON.—Common. Although the only birds positively identified were of this species, I have no doubt the Yellow-crowned Night Heron was also seen. Several flocks of twenty or more birds were jumped at different times. There is a short period just before dark when these "gros-becs" may be seen commonly in flight.

Grus americana. WHOOPING CRANE.—This species was not observed, and is included in the list because of the great interest taken in its welfare. The Chenier country was formerly a favorite wintering ground, and I saw several birds during the winter of 1916 and 1917. Adam Broussard, the warden on the Chenier was told that three Cranes were wintering six miles west of the ridge.

Rallus elegans. KING RAIL.—This is usually a common bird but the only specimen I saw was one caught by a boy in a muskrat trap.

Rallus crepitans saturatus. LOUISIANA CLAPPER RAIL.—Usually common. I flushed several birds in the pasture, but owing to their secretive habits, they are difficult to find without the use of a dog.

Porzana carolina. SORA.—This is the common form in winter. The trappers often catch them in their traps, and they are often jumped when one walks the marsh. They seem to take to wing more readily than the above species.

Gallinula galeata. FLORIDA GALLINULE.—I believe the bulk of this species moves south of our boundary during the winter months. A pair fed along the little stream in front of the Chenier, where they were seen almost daily. Gallinules run like Rails, and so, though they may be common, they are rarely seen.

Fulica americana. COOT.—An extremely common bird near the Chenier. Thousands were on the Club property where they lived in ease on the grain placed for Ducks. They herd together in large flocks, and as they are rarely molested, they have become very tame. The French people have an appropriate name for this bird, "poule d'eau,"—the water chicken.

Gallinago delicata. WILSON'S SNIPE.—Not particularily abundant near the Chenier. A few could be seen daily, in favorable places; on the Club grounds, however, two miles north, they were very numerous.

Pelidna alpina sakhalina. RED-BACKED SANDPIPER.—Usually very common during the winter and spring months, but very few were seen this trip. A small flock hung about the mud flat in front of the ridge, and could be seen at any time. In former years, I found them in great numbers along certain ponds in the marsh.

Limnodromus griseus scolopaceus. LONG-BILLED DOWITCHER.—A few were seen on the mud flats in the pasture. Usually an abundant winter bird. They are very tame, and often assemble in large flocks.

Ereunetes mauri. WESTERN SANDPIPER.—Several flocks of small sandpipers were seen daily on the mud flats and specimens collected were all of this species. It is possible that the Least and Semipalmated Sandpipers were present, but none were taken.

Squatarola squatarola. BLACK-BELLIED PLOVER.—A dozen or more of this species worked the beach and mud flats, remaining in the same vicinity. They were very tame.

Oxyechus vociferus. KILLDEER.—Very common, especially in the marshy area on the ridge. Their familiar call was the first to be heard in the morning, and the last in the evening.

Arenaria interpres morinella. RUDDY TURNSTONE.—A few stragglers worked the beach daily, usually one or two birds being seen at a time.

Zenaidura macroura carolinensis. MOURNING DOVE.—They are very common on the Chenier during the early winter months, but very few were seen during my visit. They were noted in small numbers in the fields. This is an abundant species along the southern coast, and as it is classed as a game bird, great numbers are killed.

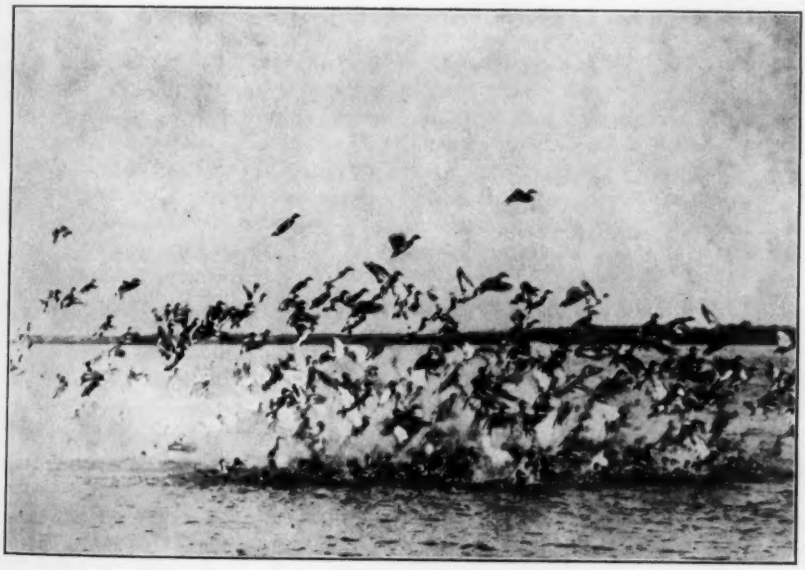
Cathartes aura septentrionalis. TURKEY VULTURE.—An occasional bird was noted in the flocks of Black Vultures. They are not common.

Coragyps urubu. BLACK VULTURE.—A common bird on the Chenier. As they often work over the marshes and destroy the fur bearing animals caught in traps, they are extremely unpopular; the people on the Chenier made a practice of shooting the Vultures at their evening roost, and have discouraged the birds to some extent.

Circus hudsonius. MARSH HAWK.—Common. This bird is also unpopular, due to its habit of catching crippled Ducks, or stealing birds dropped by gunners. They may be seen sailing over the marsh at all hours of the day.

Buteo borealis borealis. RED-TAILED HAWK.—A fairly common species. Their familiar cry was heard commonly, and several could be seen daily.

Buteo lineatus lineatus. RED-SHOULDERED HAWK.—Only two birds were seen on the Chenier. This is a very common Hawk along the wooded bayous just to the northward.



Photos by E. A. McIlhenny.

UPPER: MALLARDS AND PINTAILS IN THE AIR, NEAR CHENIER, LA.
LOWER: MALLARDS RISING FROM THE WATER, NEAR CHENIER, LA.

Haliaeetus leucocephalus leucocephalus. BALD EAGLE.—A brown-headed bird was seen over the marsh December 14. The Bald Eagles nest in favorable places in the cypress swamps to the northward, and make long excursions over the marsh country, where they catch many crippled Ducks. Mr. Sagrera caught an adult in a trap a few days previous to my visit.

Falco peregrinus anatum. DUCK HAWK.—One can not help but admire the dexterity with which these fellows secure their victims. Fortunately they are not common. A pair worked the vicinity of the Chenier, and were seen on a few occasions.

Falco columbarius columbarius. PIGEON HAWK.—A few were seen over the marsh and I collected one on the Chenier. It had been feeding on Myrtle Warblers.

Tyto pratincola. BARN OWL.—These Owls are found among the oaks at all times of the year. I have seen them on numerous occasions in the past, but observed only one this trip. It was being mobbed by half a dozen Fish Crows.

Otus asio subspecies. SCREECH OWL.—Not common. They were heard on a few occasions, and one was seen after dusk, but not collected. I am uncertain as to the subspecies, but it would probably prove to be *floridanus*, as I have taken this form on Avery Island, the first high land to the northward.

Bubo virginianus virginianus. GREAT HORNED OWL.—One was flushed from a ridge west of the Chenier, and instead of following through the thick cover, it cut across a mile of open prairie land to the Chenier proper. It flew low, and very rapidly. These birds are rare on the Chenier.

Speotyto cunicularia hypogaea. BURROWING OWL.—A rather uncommon bird on the Chenier. Mr. Arthur in 'The Birds of Louisiana' suggests the possibility of the Louisiana form proving to be *floridana*, but the specimen I secured was typical *hypogaea*. It was living in a hole among the roots of a great live-oak. One bird was seen at its burrow on a canal bank, where a dredge had formed a big mound.

Ceryle alcyon alcyon. BELTED KINGFISHER.—Not common. A few birds worked the canals and could be seen daily.

Sphyrapicus varius varius. YELLOW-BELLIED SAPSUCKER.—This is a common species.

Colaptes auratus auratus. FLICKER.—Very common. As they have the unfortunate habit of drilling holes through the houses, they are heartily disliked by the people of the Chenier.

Sayornis phoebe. PHOEBE.—Common. They are found on all parts of the ridge.

Cyanocitta cristata cristata. BLUE JAY.—Common. These birds are disliked, as they harvest the greater part of the pecan crop.

Corvus ossifragus. FISH CROW.—Not more than a dozen birds were found, six being seen at one time, as they tormented a Barn Owl. (Mr.

Sagrera tells me the large Crow is common in the summer and fall, and I saw a great many on Avery Island in December.)

Agelaius phoeniceus phoeniceus. RED-WINGED BLACKBIRD.—These birds were very abundant, in large flocks, according to their sexes. The flocks of males seemed to be the most numerous. I made no attempt to collect a series to determine the forms present; those taken, however, proved to be this subspecies.

Sturnella magna argutula. SOUTHERN MEADOWLARK.—Common upon the ridges west of the Chenier. They were in full song, and were especially active early in the morning. I did not determine whether other forms were present or not.

Megaquiscalus major major. BOAT-TAILED GRACKLE.—A very common bird. As with the Red-wings, these fellows gathered in large flocks according to their sexes. When great flocks began to assemble in a moist area near the house, the people assured me we were due for a "norther." The storm arrived on schedule, but I am unable to say whether the weather had been forecast by the flocking Grackles.

Passerculus sandwichensis savanna. SAVANNAH SPARROW.—This form was very common, being found on the ridge proper, in the fields, and even in the marsh.

Passerculus sandwichensis subspecies.—Among the Savannah Sparrows of the coast region of Louisiana is a very dark form which is apparently undescribed. I took but one specimen on the trip, although many others were seen; and, we have two others from the same general region. These specimens were submitted to Mr. Outram Bangs, and he wrote me as follows:—

"*Passerculus sandwichensis* subspecies. Three very dark birds from Louisiana, with very blackish upper parts, deep chestnut edges to wing feathers, much black on the head and intense black stripes below. These are so different from eastern specimens of *savanna* that I feel pretty sure that they represent an undescribed form. Where does this form breed is the question. I wonder if it can be resident and breeding in the marshes of Louisiana. They are too large to be stray migrants of the Californian *bryanti*, and are also still darker, or rather, blacker than that form. There is a rather dark Savannah Sparrow that breeds in Wisconsin and Michigan and migrates to Arkansas, Texas (sometimes) and Tarpon Springs, Florida (though most of the specimens from there are the eastern bird). This form, which is rather ill defined, is, however, much less blackish than your birds. We have four skins from Louisiana, one taken at Rigolets as late as April 4. These are much nearer to yours than they are to eastern specimens of *savanna*, and are the darkest of our several hundred Savannah Sparrows."

I hope to have an opportunity to secure a good series of these birds in the near future, and if not, I trust that this brief notice will cause some other worker to study them. While these birds were fairly common, they

seemed to prefer the heavy cover of the salt marsh, near the beach, and were extremely difficult to secure.

Melospiza georgiana. SWAMP SPARROW.—This species seemed to prefer the fields bordering the oak woods, where they were common.

Cardinalis cardinalis cardinalis. CARDINAL.—These beautiful birds were very common upon the ridges, and they were sometimes seen in small flocks.

Iridoprocne bicolor. TREE SWALLOW.—Very common over the marsh, where thousands were in sight at once.

Bombycilla cedrorum. CEDAR WAXWING.—A few small flocks were seen.

Lanius ludovicianus migrans. MIGRANT SHRIKE.—Shrikes were fairly common, and the two specimens collected proved to be this form.

Lanivereo solitarius solitarius. BLUE-HEADED VIREO.—One specimen was seen and collected.

Dendroica coronata. MYRTLE WARBLER.—A common bird along the fields and ridges. They worked in small flocks of twenty or more individuals.

Dendroica palmarum palmarum. PALM WARBLER.—Only a few were seen, not more than a dozen all told.

Mimus polyglottos polyglottos. MOCKINGBIRD.—Very common. They are residents of the Chenier, being as abundant at one time of the year as another.

Dumetella carolinensis. CATBIRD.—Only two birds were seen.

Toxostoma rufum. BROWN THRASHER.—This species was fairly common, and several could be seen on an hour's walk. They seemed shy, and remained in heavy cover.

Thryothorus ludovicianus ludovicianus. CAROLINA WREN.—These little fellows were fairly well distributed along the Chenier. They were in full song.

Troglodytes aedon aedon. HOUSE WREN.—Very few were seen, all those noted being away from the buildings.

Cistothorus stellaris. SHORT-BILLED MARSH WREN.—Only one specimen was positively identified, and that was one taken on the ridge west of the Chenier. The cover is so heavy it would take a whole winter to work the vicinity satisfactorily, to determine the winter status of a species.

Regulus satrapa satrapa. GOLDEN-CROWNED KINGLET.—Very common being found in flocks on all parts of the Chenier.

Regulus calendula calendula. RUBY-CROWNED KINGLET.—A good many of this species were noted but they were not so numerous as the Golden-crowned Kinglets.

Polioptila caerulea caerulea. BLUE-GRAY GNATCATCHER.—A few were noted daily in the oak woods.

Planesticus migratorius subspecies. Robins were very common, but as none were collected, the subspecies was not determined. It is quite

probable that both *migratorius* and *achrusterus* were represented as both forms are known to winter in Louisiana.

Sialia sialis sialis. BLUEBIRD.—These beautiful little fellows were common in the open woods bordering the cultivated fields. They were catching insects on the wing, looking in general appearance very much like Flycatchers.

Chicago Academy of Sciences,
Chicago, Illinois.

BIRD NOTES FROM SOUTHERN FLORIDA.

BY BAYARD H. CHRISTY.

THE immediate delight for the bird-lover on a winter visit to Coconut Grove lies in the half familiar, half strange bird life about him. He walks out into the first morning, rejoicing through every sense, as one transported to the happy isles. The Mockingbird's song comes to him fragrant with orange blossoms; Blue Jays scream; a Catbird darts to cover; a Yellowthroat scolds. He notes the Warblers flitting in the live oaks,—Palm Warblers for the greater part, and Myrtles with them, and one or two Prairies. While he looks a Prairie Warbler sings its shrill ascending song. Presently from the mangroves at the water's edge the loud rolling call of a Wren attracts attention—Carolina—and yet not Carolina. Why that strangeness? And then with sudden realization the bird-lover exclaims happily to himself, "Why yes, of course! I should have known." And he waits to hear again the notes of a new acquaintance, the Florida Wren.

In the shade of the oleanders a feeding station has been established. A coconut in the husk has been split to serve as a food tray. A male Cardinal dashes up and alights on the rim, driving a female to a perch nearby. What a dazzling fellow! And the female too, See! Her breast is suffused with cardinal red. Here again is an old friend, but with a change—the Florida Cardinal.

To the same half coconut after a few minutes come two or three smaller birds; finches too of some sort, and strangely nondescript in plain olive-gray plumage. Then suddenly among them a marvel appears, a breath-taking, beautiful thing, a jewel of a bird, an enameled creature of intensest blue and vermillion and golden green. It is the male Nonpareil and those sober clad birds are his females. This exquisite finch is found about Coconut Grove in abundance, and because he is familiar and comes on invitation to the feeding stations, he is known well and made much of.

Along the shore of the bay move the water-birds,—Pelicans, Cormorants, Gulls, and Mergansers; overhead sails an occasional Man-o'War-Bird; Swallows hawk about—many Tree Swallows,

and perhaps a pair of Purple Martins. But the glory of the Florida bird world is the great, beautiful wading birds of the Everglades. To see them and to delight in them, one must travel far and endure some rough living,—no great hardship, if one comes with gusto to the undertaking.

Southern Florida lies like a wide shallow plate, holding within its rim Lake Okeechobee and the Everglades. The Everglades are but a continuation, a southward extension of the lake; they are its enormously wide, grass-grown margin. On three sides, to the north, to the east, and to the west, the rim of the plate is well defined, but to the south it is lost. Stream flow is from north to south, and over all the breadth of the Everglades there is a constant, gentle, imperceptible welling of potable sweet water. At the southern edge the outflowing fresh water meets the tide, and there over a strip ten or fifteen miles wide the water is brackish and cannot be drunk.

Of late years the project has gone forward of draining the region and reclaiming the land for agricultural purposes. Canals have been cut across the Everglades, through the rim of the plate, and across the coastal plain, and by these means the level of Okeechobee has been lowered some eight feet. Wide areas have been uncovered, but vastly wider areas continue under the widespread shallow flood. It is good to see to eastward of Lake Okeechobee rich black fields under cultivation; but it is pitiful to see fires raging over miles of wasteland,—fires which consume not the grass merely but the peaty soil itself, and leave nothing but desolate and sterile sand.

Where the drainage canals run there causeways are thrown up, and along these causeways automobile roads are in course of building. In the vicinity of the coastal towns the road surfaces are smooth, but the farther one drives the rougher they grow, until at length they are scarcely passable. The casual visitors turn back, and only they go on who have business ahead—road-builders, naturalists, and other such persons. A few hundred Seminoles move through the Everglades, as free in their dugouts and as surely at home as sea birds.

The Everglades, it will be remembered, are not an unbroken waste. The sea of grass is islanded with cypress swamps, with

hammocks of tangled shrubs and vines, and with pine grown ridges. To the west and north of Lake Okeechobee extends the higher, sandy Kissimmee prairie, with scattered forests of pine and cypress and cabbage palmetto.

The ensuing notes upon particular species of rarer birds were made by two of us, bird-lovers, who travelled together far and wide over southern Florida, between the 20th of February and the 5th of March, 1927. The greater part of the travelling was by automobile. Some remote places in the Cape Sable region were reached by canoe, and in that region we carried the canoe, lashed to framework on the machine.

We ran out from Miami on the Tamiami Trail, fifty miles westward across the Everglades; we ran southwestward seventy-five miles to Cape Sable; we ran northward to Palm Beach, thence westward to Lake Okeechobee, around the northern end of Okeechobee, and southward again to Immokalee and the edge of the Big Cypress. From Immokalee we turned to the west and ran to Ft. Myers on the Gulf coast. We returned across the state to Ft. Pierce, and turning southward followed the east coast back again to Coconut Grove. In all we travelled about nine hundred miles. We carried our food and, in the Cape Sable region, our water as well. We slept on the ground in one-man tents equipped with ground cloth and mosquito netting.

On the edge of the tropics there is no twilight to speak of. Stopping at five o'clock in the evening, we had scarcely time before dark to eat our supper and crawl into our tents; and though we rose at dawn, it was broad day before we could complete our simple round of breakfasting and striking camp. During one night we had a furious storm with torrents of rain, and the second night after, frost. For the rest, the weather was serene and the temperature equable. We suffered no hardship. Mosquitoes were not troublesome. We saw no rattlesnake, nor wished to. Water moccasins were abundant and we cautiously avoided them. We saw but one alligator. The two small mammals which we actually encountered happened both of them to be creatures of unusual interest: a mangrove fox squirrel (*Sciurus niger avicennia* Howell) seen in the mangrove forest near Cape Sable, and a round-tailed muskrat, which, since it is not a muskrat at all, Mr. Arthur H.

Howell proposes to call Everglade water-rat (*Neofiber alleni nigrescens* Howell). We found one of these animals lying dead on the road on the east shore of Lake Okeechobee. It had been run over by a passing car. The bird notes follow.

Colymbus holbœlli. HOLBŒLL'S GREBE.—Running south from Ft. Pierce along the Indian River, we noted on March 4 not far from shore a single bird, and next morning a few miles beyond, two together.

Larus spp. The Gulls on Lake Okeechobee we found to be Herring (*Larus argentatus*) and Ring-billed (*Larus delawarensis*). Along the east coast there were Laughing Gulls (*Larus atricilla*) in greatest abundance, many Bonaparte's (*Larus philadelphia*) and a few Herring.

Sterna spp. There were large, Red-billed Terns both on Lake Ingram—a long brackish lake on the ocean plain to eastward from Cape Sable, and on the coast at Palm Beach,—Royal Terns (*Sterna maxima*) no doubt, and probably Caspian (*Sterna caspia imperator*) as well.

Pelecanus erythrorhynchos. WHITE PELICAN.—We saw a few of these great birds on the shallow brackish mangrove-fringed lakes in the Cape Sable region; at Lake Ingram a flock of nine flying in file. The breeding range of the species lies far away, in the northwestern states, and these were winter visitants. Their migration route extends presumably along the Gulf coast.

Anas f. fulvigula. FLORIDA DUCK.—Frequently met in the Everglades, and once on the west shore of Lake Okeechobee. Always in pairs. They have all the appearance of Black Ducks (*Anas rubripes*), except that the heads are of paler color. And this is a field mark which in good light may be noted even at considerable distance.

Anatidæ. The migrant Ducks which we noted were Baldpate (*Mareca americana*), a small flock in the Everglades; Green-winged Teal (*Nettion carolinense*), a few on Lake Okeechobee; Blue-winged Teal (*Querquedula discors*), abundant and widely distributed, in flocks, and often scattered in pairs; Shoveller (*Spatula clypeata*), small flocks in tide-water country; Pintail (*Dafila acuta tzitzihoa*), abundant and generally distributed; Lesser Scaup *Nyroca affinis*), the most abundant of all.

Guara alba. WHITE IBIS.—These birds seemed not yet to be breeding. We found them in large flocks far out on the Everglades, where they were feeding in company with Herons of various species; and there we noted that the immature birds tended to flock apart from the adults. The species is plentiful too in the tide-water country. Few birds are more beautiful, few so distinctive in appearance. White bodies, black primaries, long coral red bills and long coral red legs. They fly in long oblique lines with outstretched and somewhat drooping neck and legs. The wing beats are rapid, and because of their black tips the wings have the appearance of having been clipped.

Mycteria americana. WOOD IBIS.—They have a habit of flying in

companies. Twenty will maneuvre in unison, flapping, sailing, and wheeling with that flock unity which characterizes shore-birds; and because they are large birds and handsome, they afford at such times a beautiful and thrilling spectacle.

Ardea occidentalis. GREAT WHITE HERON.—A few encountered singly, one in the Everglades, the others on the ocean plain east of Cape Sable. Their solitary habit is that of the Great Blue Heron.

Ardea herodias wardi. WARD'S HERON.—Abundant. One was noted, perched by its nest in a low and leafless tree at the edge of a fresh-water pond on the Kissimmee prairie.

An account of the "rookery" species will be given in a later paper, the additional species forming such assemblages consisted of the Anhinga (*Anhinga anhinga*), Florida Cormorant (*Phalacrocorax a. floridanus*), Egret (*Casmerodius egretta*), Snowy Heron (*Egretta c. candidissima*), Louisiana Heron (*Hydranassa tricolor ruficollis*), Little Blue Heron (*Florida c. coerulea*), Green Heron (*Butorides v. virescens*), and Black-crowned Night Heron (*Nycticorax n. naevius*).

Grus mexicanus. SANDHILL CRANE.—It was a great satisfaction to find these fine birds of fairly frequent occurrence. In the course of three days' running on the dry, sandy prairie to the northward and westward of Lake Okeechobee we noted fourteen birds in all. Usually we saw them in pairs; once, three together. Some of them were surprisingly tame—perhaps because they now are fully protected by law. Their strange, loud cry suggested to my companion the clatter of a block at a masthead. The extreme points where we observed them were, southward, five miles south of Immokalee; westward, on the Gulf coast near Ft. Myers; eastward, on the Indian River near Stuart.

Aramus v. vociferus. LIMPKIN.—We came on perhaps a dozen in all, in and near bushy islands in the Everglades, in pairs and in a small straggling company. We noted one in the tide-water country.

Rallidæ.—Of the Rails we saw the King Rail (*Rallus elegans*) in the Everglades, and heard the Clapper (*Rallus longirostris scotti*) on the shore of Biscayne Bay.

The Coot (*Fulica americana*) was an abundant bird on all inland waters, fresh and salt; the Florida Gallinule (*Gallinula chloropus cachinnans*) scarcely less so.

The Purple Gallinule (*Ionornis martinicus*) we found abundant enough, but at one place only, in waterways choked with water hyacinth, along the west shore of Lake Okeechobee, and there in association with the two other species named.

Limicolæ.—The most abundant shore-bird was the Kildeer (*Oxyechus vociferus*). We found it everywhere, usually in small flocks. In the Everglades we noted one Wilson's Snipe (*Gallinago delicata*) and the Yellow-legs of both species (*Totanus melanoleucus* and *flavipes*). On the mud flats of the Cape Sable region were Least and Semipalmated Sand-

pipers (*Pisobia minutilla* and *Ereunetes pusillus*), the lesser Yellow-legs (*flavipes*), a few Spotted Sandpipers (*Actitis macularia*), one or two Black-bellied Plovers (*Squatarola squatarola*), and a small flock of Semipalmated Plovers (*Charadrius semipalmatus*). Along the Indian River we found the Sanderling (*Crocethia alba*).

Meleagris gallopavo osceola. FLORIDA TURKEY.—We were afoot, skirting the Big Cypress. In a grassy opening with scattered clumps of scrub palmetto some cattle ran before us, and presently there were two Turkeys, a gobbler and a hen, running before the cattle. When we returned from this expedition we found a state game warden in our camp, waiting for us. We congratulated him on his alertness, and perhaps our generous words were some compensation to him for having followed a profitless lead for fifteen miles.

Elanoides forficatus. SWALLOW-TAILED KITE.—At midday on March 2, at the edge of the Big Cypress, three passed overhead, flying together, at a height of about four hundred feet. They were travelling northwestward. They might have gone unseen, had not their high-pitched calls attracted our attention. In grace of form and motion and in their coloration of contrasting steel blue and white they have a suggestion of giant Swallows.

Buteo lineatus alleni. FLORIDA RED-SHOULDERED HAWK.—The most abundant of the Hawks. We found two nests, one on February 21 in a pine island in the Everglades, the other on March 3 at the edge of the Big Cypress. The parent bird after flying from the latter nest, returned with a grasshopper in her beak. There were young in the nest, no doubt.

Polyborus cheriway. AUDUBON'S CARACARA.—On the Kissimmee Prairie we saw a few, usually in pairs, and usually in or near islanded groups of cabbage palmetto. The Caracara is a large, conspicuous, black and white, loose flying bird, easily to be recognized. When seen near at hand and under the glass, the bare face and the great yellow beak with carmine base, forming a continuous curve with the forehead, are notably unique features.

Speotyto cunicularia floridana. FLORIDA BURROWING OWL.—The Burrowing Owl, the Caracara, and the Crane are birds of the Kissimmee Prairie. The burrows of the Owls are conspicuous in the grass and low palmetto scrub, because of the heaps of clean sand at their doors. And on each heap a pair of Owls stands perched. When approached they first bob uneasily and then fly, uttering a gentle reiterated note, and perch again on the open prairie. We came on a few pairs, and usually found at each particular station two or three pairs neighboring together. We remarked how high in the head the Owl's eyes are seated—a feature related perhaps to its terrestrial habit of life. In consequence, the bird has no forehead to speak of, and lacks that aspect of wisdom imputed to its family generally.

Phlœotomus pileatus floridanus. PILEATED WOODPECKER.—Abundant in all heavy forests. We looked and listened in vain for the Ivory-

bill. To find him would require many days' searching, and we had the misgiving that even so we might have searched in vain.

Aphelocoma cyanea. FLORIDA JAY. A most interesting species, resembling the Canada Jay in that it lacks a crest, and resembling somewhat a Towhee in habit and in posture. Beautiful in its plumage of dove color and cobalt blue. We noted it frequently along the highway (often perched on a telegraph wire) from Stuart southward to the apparent limit of its range, about twenty-five miles below Palm Beach. Inland, we found a pair at Immokalee.

Ammospiza mirabilis. CAPE SABLE SEASIDE SPARROW.—It particularly interested my companion to discover whether this frail little creature whose habitat is contained within a few square miles, had outlived the great hurricane of September 1926, which had swept by with enormously great wind velocity and had carried a flood six feet deep over the whole ocean plain. And it was a marvel indeed to find it there in seemingly normal numbers.

Peucæa æ. æstivalis. PINE-WOODS SPARROW. We heard one singing at sunrise at our camp near Stuart on the east coast. The notes once heard are remembered, for they have a quality such as is found in those of the Hermit Thrush.

Sewickley, Pennsylvania.

NOTES ON THE LESSER SNOW AND BLUE GEESE OBSERVED AT WHITEWATER LAKE, MANITOBA.

BY C. G. HARROLD.

IN the spring of 1926 unusually large numbers of Lesser Snow Geese (*Chen hyperboreus hyperboreus*) and Blue Geese (*Chen caerulescens*) arrived in southern Manitoba. At Whitewater lake, a few miles north of the Turtle mountains in southwestern Manitoba, the first arrivals appeared in the afternoon of April 11 coming in from the north at a great height. They had probably circled to descend against the wind which was south at the time. For the next few days they arrived in steadily increasing numbers until in about a week they were in countless thousands. Every morning at daylight I could tell almost to the minute when the first flock was about to leave for the stubble, by the steadily increasing volume of sound coming from the white mass of Geese in the lake. This increased to a certain pitch when there was silence for a second, then a roar of wings as the first flock of possibly several thousand birds left the lake, quickly spreading out in regular line formation. After several minutes, the Geese in the lake started to call again and the process described above was repeated until all had left the lake. There were no stragglers between the flocks. Sometimes ten or twelve of these large flocks would start out and on eight consecutive mornings, they passed right over my camp at only 50–100 feet from the ground, a remarkable experience. They straggled back to the lake at about 10 a.m. On first arrival they do not seem particular whether they go out to feed again in the afternoon or not, but after staying several weeks they make two regular flights a day; sometimes going 20–30 miles from the lake. The afternoon flight then starts out with as great regularity as that in the morning, usually leaving at 5–5:30 p.m. and returning after sunset. They seem to prefer barley to any other variety of grain. The direction taken in foraging expeditions from the lake depends on the wind to a large extent. The Geese will usually go out against the wind or quartering it. On one occasion the first flock of the afternoon flight had

just started out towards a heavy storm which was blowing up. The first line had reached a point about a mile from the lake when the storm broke on them with such severity that the miniature tornado of wind and hail drove them to the ground. None appeared to have been injured by the hail however and in a few minutes they continued on their way. I have seen them go out to feed against a driving dust storm so thick that one could scarcely see thirty yards. On such occasions they fly within a few feet of the ground and will pass very close to a man in full view, apparently losing all their usual wariness. When I left on May 9 their numbers had not greatly diminished. Their usual stay is from four to five weeks at this point. The main line of flight of *C. caerulescens* is considerably further east, consequently the proportion of Blues among the Lesser Snows is relatively small at this lake. It is not uncommon to see a flock of four or five hundred Lesser Snows without a single Blue among them. However the Blues that are present in this locality are very interesting birds. They show every possible stage of intergradation of plumage from a bird with entire underparts, head and neck white, to the typical dark colored *caerulescens*. Apparently, however, the bird described above with entire underparts white is a rarity as, although hundreds of Blues passed over my head at close range every day for two weeks, I only detected the one example which was collected. A plumage that was not uncommon showed entirely white underparts except for a dark band across the breast separating the white of the head and neck from that of the underparts. Further encroachment of the white areas was rare, only a few birds showing white patches cutting this dark band. All stages between this dark banded bird and the typical blue were more or less common. One feature, which is very noticeable, is the retention of the normally colored interscapular region and wings in all plumages except that in examples showing the most extensive white areas below, the lower back and inner tertials also become white. Generally speaking, the Blue Goose appears to acquire its adult plumage more rapidly than is the case with the Lesser Snow. I have never seen a juvenile Blue retaining the brown head in April, whereas some juvenile Lesser Snows differ little from October birds. One Blue however, collected in April,

had a white head only, the neck still retaining the juvenile plumage.

With regard to a possible explanation of the variability of the plumage of *C. caerulescens*, it is interesting to note that in the main line of flight of this species, the birds show little or no digression from the normal plumage, whereas at the western edge (I have never seen a Blue Goose west of the Deloraine district) of their range, variations are common. In other words, if you see large flocks composed entirely (or nearly so) of Blues, the probability is that they are uniformly typical in plumage but if small numbers of Blue are noticed in large flights of Lesser Snow, variations will predominate. The same conditions pertain in their winter quarters according to Mr. F. H. Kennard, who is inclined to favor hybridism as the explanation. This theory is supported by the fact that I have on three different occasions seen a Blue Goose and a Lesser Snow chasing a Lesser Snow in their peculiar mating flight. The notes of the two species appear to me to be indistinguishable, both varying greatly in tone, probably due to age and sex.

Winnipeg, Manitoba.

THE ORNITHOLOGICAL COLLECTION OF THE ZOOLOGICAL MUSEUM IN MUNICH.

BY C. E. HELLMAYR.

THE nucleus of the Munich collection goes back to the old Museum of the Bavarian Academy of Sciences founded in 1759. The earliest specimens that I have been able to trace are certain species described by Hahn[1] from the Academy's Museum, the types of which, with a few exceptions, are still preserved. In 1807 Johann Baptist Spix took charge of the Zoological Department, and from 1817–1820, in company with the botanist Philipp Martins, traveled extensively in Brazil. The ornithological results of these expedition were laid down in a sumptuous work entitled 'Avium Speciae Novae, quas in itinere per Brasiliam annis 1817–1820 . . . suscepto collegit et descripsit . . . ,' consisting of two volumes in imperial 4°, in which no lexs than 220 supposed new species of birds are described. The entire material was deposited in the Academy and, following the custom of the time, mounted for exhibition. All of the types, excepting a few which have disappeared, are still in existence as may be seen from a critical review published by myself in the 'Abhandlungen der Bayerischen Akademie der Wissenschaften,' 2, Kl., vol. 22, Abt. 3, p. 561–726, 1906. They were dismounted under my supervision and placed in the study series of skins.

In 1826, when the University of Landshut was transferred to Munich, the zoological collection of that institution was merged with the Academy's Museum, this combination resulting in the foundation of the Zoological Museum of the Bavarian State, annexed to the Department of Zoology at the University. Under Spix's successor, Johannes Wagler (1826–32), the Museum received an interesting shipment of Mexican birds from a Mr. Keerl,[2] which was promptly reported on in the 'Isis' for 1831. During Wagler's curatorship, ornithology was given more attention than before, and numerous novelties described by him in the 'Systema Avium' and 'Monographia Psittacorum' were based

[1] Vögel aus Asien, Africa, America and Neuholland. Nürnberg. 1818 et segs.
[2] Mispelt "Reerl" in the Willughby Society's reprint.

on material in the Munich Museum. After Wagler's untimely death, at the age of 32, Andreas Wagner, the famous mammalogist, was appointed as Curator. He published only short notices of collections received through Karwinski from Mexico, and through Schubert from Egypt and Sinai, including the description of two new species,[1] the types being now incorporated in the research series.

The next important accession (through bequest) was the large private collection of the Duke of Leuchtenberg[2] of Eichstatt, which, in addition to a specimen of the Great Auk, contained the types of *Pteroglossus beauharnaisii* Wagler and *Asio stygius* Wagler.

The brothers, J. H. C. Friedrich and J. Wilhelm Sturm, well known naturalists of Nuremberg, also left their extensive zoological collections, especially rich in insects, to the Bavarian State Museum. Besides many species secured by their correspondent, Dr. Stephan, in Minas Geraes and other parts of southern Brazil, this gift included a set of artistically mounted Hummingbirds (still on exhibit in the original dust-proof case), and the series of Toucans which formed the material for their Folio work 'Monographie der Ramphastidae,' published at Nuremberg in 1841 to 1847. The types of several new species described therein thus passed into the Munich Museum.

The brothers Schlagintweit, distinguished geographers, procured a fair collection of birds during their exploration in Tibet and Western Himalayas, which was likewise deposited in the Museum.

Moriz Wagner, brother of the zoologist mentioned above, while traveling in Ecuador, lost no opportunity of securing birds for the Museum of his native city. Although the total number obtained by him was small, his shipments added many species previously unrepresented as well as types of *Aglaeactis aequatorialis* Cabanis and Heine.

In the early seventies, the Museum was enriched by the acquisition of a representative set of the species collected by Dr. F. Ley-

[1] *Cuculus velox* and *Corvus infumatus* in Münchener Gelehrte Anzeigen, *3*, 1836, p. 95, and l. c., *8*, 1839, p. 301.

[2] The Duke of Leuchtenberg was a descendant of Eugene Beauharnais, Viceroy of Italy, the stepson of Napoleon 1st, and his wife, Augusta, a daughter of the first King of Bavaria.

bold, around Mendoza and in the Chilean Cordilleras near Santiago. Sir Julius Von Haast presented some of the characteristic species from New Zealand, while Mr. J. Parrot and Baron Von Müller were responsible for the donation of a series of birds from New South Wales. Dr. Gustav Radde, the late director of the Tiflis Museum, was the donor of one hundred bird skins collected by himself at Lenkoran and in the Caucasus, and Mr. Friedel Martin transmitted a collection of native-made skins from Sikkim to the Museum.

In the late nineties, the institution was favored with a gift by Mr. Oscar Neumann, of a set of duplicates from the collection made during his travels in German and British East Africa, and about the same time Dr. Ludwig Martin, the well-known entomologist, then physician in the Dutch Colonial Army, began sending in ornithological specimens from the Deli District of Sumatra.

In 1900, Dr. O. Haberer, a former student of the University, settled in Yokohama, and within the next two or three years presented large collections from the two main islands of Japan, the Kuril Island Iturup as well as from the lower Yangtse River in China, amounting to about 2000 bird skins.

Now and then smaller consignments were received from various gentlemen, among which an interesting lot from Hercegowina, Balkan Peninsula, donated by Eugene Sandré, deserves special notice.

After Wagner's retirement in the forties, scientific activity in the Zoological Department drifted away to Entomology, and for more than sixty years not a single publication on ornithology stands to the credit of its staff. With the appointment of Dr. Franz Doflein as subdirector in 1902, however, the Museum entered upon a new phase of development, and it is due to his initiative that, early in 1903, the writer assumed the task of organizing an Ornithological Department. When he entered upon his duties, the skin collection numbered about 4000 specimens, and there was but a small library, consisting principally of Gould's folios and some illustrated works of the early French authors. While hampered by lack of space, he immediately set to work for better installation and increase of the collections under his care. With the aid of a special grant from the Academy, a representative series

of the bird fauna of the Galapagos Islands, numbering close to a thousand specimens and including two *Nannopterum harrisi*, and Dr. Georg von Almásy's private collection of 1500 Hungarian birds were acquired by purchase. Dr. Bruno Hagen, the noted ethnologist, presented valuable material from Sumatra, Bangka[1] and German New Guinea, while Mr. G. Wieninger, of Schärding (Austria), contributed 150 bird skins from his coffee plantation Bernalcué, near Asunçión, Paraguay. Dr. Doflein's expedition to the east resulted in the accumulation of 830 specimens from Japan and Ceylon, and Lieut. Kaufmann contributed 200 birds collected during his rambles in Mysore and the Himalayan Mountains. The distinguished explorer, Prof. Gottfried Merzbacher, on his two expeditions in 1902–03 and 1907–08 to the Tian-shan, while primarily interested in geography, succeeded in bringing together a splendid collection of nearly 2000 bird skins[2] which he generously donated to the Museum.

On the writer's return to Munich from a three years' leave of absence, he was appointed Curator of the newly created Department of Birds which, in 1909, was transferred to more comfortable quarters in another wing of the Museum building, where adequate accomodation for arranging the research material and spacious offices for the Curator and his assistant were available. Special grants having been obtained from the Bavarian Legislature, wooden cabinets for the collection were soon installed, and at the same time many books and serials added to the rapidly growing departmental library. Among the more important accessions, during this period, may be mentioned the large collection of European birds' eggs, formed by the late Dr. Hermann Burstert of Memmingen. Dr. Karl Brügel donated fifty specimens from Siam and Borneo, including two supposed novelties described by the late K. Parrot.[3] 140 skins from western Ecuador and 63 from Liberia were purchased.

The year 1909 was an exceptionally eventful one in the history of the Department. The accessions reached the grand total of 6129 entries and included 3250 skins from the collection of Count

[1] See Parrot, Abhandl. Bayer. AK. Wiss., 2. Kl., *24*, No. 1, 1907, p. 149–286.

[2] See Schalow, Journ. Orn., 1908, p. 72–121, 202–260, and Laubmann, Abhandl. Bayr. AK. Wiss., math. phys. Kl., *26*, No. 3, 1913, p. 1–105.

[3] See Verhandl. Orn. Ges. Bay. *8*, 1908, p. 97–139.

R. de Dalmas,[1] from northern South America, the Atlantic Islands, Senegambia, Malacca, etc.; a collection of 649 specimens collected by Merwyn G. Palmer in the Chocó district of western Colombia, with several striking new species and many rarities; 284 birds from the Rio Madeira, Brazil, obtained by W. Hoffmanns; 142 skins from French Guiana, received from H. Le Moult; 527 examples from the Cumbre de Valencia, Venezuela, procured by S. M. Klages; finally 123 specimens from Maranhão through Ferdinand Schwanda. In 1910, Professor L. Müller, Curator of the Department of Herpetology, on behalf of the Academy, undertook a collecting trip to the estuary of the Amazon and, besides large quantities of herpetological material, obtained nearly 700 birds in the Pará region as well as on the islands of Marajó and Mexiana. From Corsica, the Museum received a good collection of nearly 500 skins through Dr. Karl Parrot and a local taxidermist. Another patron of the Museum, Prof. K. Schloesser, contributed a small but valuable lot from the Sinai Peninsula, while Dr. Erich Zugmayer donated 140 skins secured on his expedition to Ladak and western Tibet.

From tropical Asia, too, material began to pour in. Mr. Emil Riemel presented 214 beautifully prepared specimens collected by his correspondent Primavesi on Mount Gedeh, in western Java, and 370 additional birds from the same island and Sumatra are due to the generosity of several other gentlemen.

Capt. von Vallentini enriched the Museum by the gift of 130 skins from Kiau-tschou, China, and Gov. Hahl forwarded 117 birds from New Guinea and New Hanover, including several fine Birds of Paradise.

During the next few years, the Department kept on growing and, while purchases were mostly confined to the neotropical region, much valuable material came in from other parts of the world. The Wanner Expedition in which the Museum was represented by one of its taxidermists, yielded 384 birds from Timor[2] and 62 from Ceylon, and Prof. W. Kattwinkel's hunting trip to Massailand added 281 specimens to the African series. Dr. Lothar Von

[1] The [illegible] set, including most of the types, had previously been acquired by the Tring Museum (England).

[2] See Hellmayr, Avifauna von Timor in C. B. Haniel, Zoologie von Timor. Lief. 1, pp. vi + 112, pl. 1. Stuttgart, 1914.

Wiedenfeld presented a very valuable collection of nearly 500 skins, obtained by himself on the north coast of German New Guinea. Other smaller donations were received from the Sudan, Congo Free State, southern Tunisia, British East Africa, Borneo, the Bismarck Archipelago, Brazil, the Faroe Islands, and various parts of Germany, including two specimens of the Shoe-bill (*Balaeniceps rex*), one from the Blue Nile, the other from the Upper Congo.

Dr. Zugmayer, the ichthyologist of the Museum, commissioned by the Academy with zoological researches in Baluchistan, remitted 277 birds, including two new species.[1] In the meantime, plans had been made for an intensive ornithological survey of northern South America, and aided by an extra grant from the Academy's exploration fund and with the financial support of a number of patrons, field work was begun by Mr. S. M. Klages on the south coast of the Caribbean Sea. The large collections which were divided between the Museum and Count Seilern added 681 birds from Trinidad, 204 from Tobago, and 766 from the Caracas region in northern Venezuela to the study series. While engaged in the exploration of the Sierra of Carabobo, the world war broke out, and communications with Europe having been severed, Mr. Klages entered the service of the Carnegie Museum, Pittsburgh, on whose behalf he continued his activity for years with remarkable success.

From 1911 to 1914, the Museum received about 1000 bird skins from the Sierra of Carabaya in southern Peru,[2] secured by the brothers H. & C. Watkins, through Mr. W. F. H. Rosenburg, and acquired 176 specimens of an interesting collection made by Mr. F. B. Müller around Victoria, Espirito Santo, Brazil.[3] Other purchases included a series of 412 examples from Agua Suja, near Bagagem, western Minas Geraés, collected by G. A. Baer's former field assistant Odilo Alves de Carvalho; representative sets of the birds obtained by Dr. Adolf Lendl and Mr. Emil Weiske on their journeys to Neuquen, western Argentina (about 200 skins); a small collection (64 specimens) from the Island of Formosa, brought

[1] See Laubmann, Abhandl. Bayer. AK. Wiss., math. phys. Kl, *26*, No. 9, 1914, p 1–71.

[2] See Hellmayr, Arch. Naturg., *85*, A. Heft 10, p. 1–131, 1920.

[3] See Hellmayr, Verh. Orn. Ges. Bay., *12*, p. 126–159, 1915.

back by Dr. A. Moltrecht, and several minor lots from northwestern Argentina (Jujuy), Paraguay, and British Guiana.

Noteworthy accessions by gift were 200 birds collected by Mr. Max Prager in the Caucasus Mountains;[1] O. Tauern's Misol collection,[2] presented by Mr. E. Stresemann; thirty birds from the South Polar region through Lieut. W. Filchner; eighteen skins from New Hanover; seventy-five from the Cameroons, contributed by Dr. E. Mack, etc.

By that time, quite a good representation of the bird fauna of Bavaria had been brought together, thanks to the efficient help of numerous friends of the Museum, among whom Mr. Karl Lankes (of Munich) and Mr. Anton Fischer (of Augsburg), both excellent field naturalists, deserve special praise for their efforts to supply needed material. With the view to filling certain gaps, Prof. L. Müller, in the spring of 1914, spent several weeks in the Palatinate and accumulated a collection of 228 specimens, including a number of the peculiar Rhenish races.

The German-Austrian Alpine Club donated nearly 100 birds obtained by the members of its expedition to the Range of Peter the Great in Central Asia.

With the outbreak of the war, the influx of material from abroad came to a sudden halt. Still the Bird Department kept on growing, and in the years 1915 to 1922, no less than 18,783 specimens were incorporated in the research series. The most valuable gift ever received by the Museum was Dr. Alfred Laubmann's private series of more than 6000 Palaearctic birds, containing the collections of Anton Fischer (Swabia), R. Schlegel (Saxony), Von Tschusi[3] (generally Palaearctic), E. P. Tratz (Tyrol, Canary Islands), R. Tancré (European and Asiatic Russia), Von Thanner (Canary Islands), Hugo Weigold (Mesopotamia and Asia Minor), F. Canesi (Corsica), etc., and a large selection of Bee-eaters and Kingfishers.

In 1920, Prof. H. Dürck presented an interesting collection of 400 skins obtained by himself near Rio de Janeiro and on the Island of Marajó, and Mrs. A. Schulze enriched the Department by 49 birds from Bolivia.

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[1] See Laubmann, Orn. Jahrb., *26*, p. 8–52, 1915.

[2] See Stresemann, Journ. Orn., *61*, p. 597–611, 1913.

[3] The second collection of Von Tschusi's, numbering about 1400 skins. The first Tschusi collection of more than 5000 specimens, including forty types, was acquired by the Vienna Museum.

Much valuable material was secured by members of the Bavarian Ornithological Society in various sections of the war zone. Mr. E. Stresemann contributing from the Vosges Mountains 100, Mr. R. Schelcher from eastern Galicia 115, Mr. P. Rockinger from Anatolia 120 bird skins, while smaller consignments were received from Poland, Italy, and northern France. During the German occupation of Macedonia, an extended biological survey of that country was inaugurated under the auspices of a specially appointed scientific commission on which Prof. L. Müller served as representative of the Bavarian Academy and to whose remarkable energy the exceptional success of the enterprise is mainly due. In little more than eighteen months, an exhaustive collection of 3258 birds[1] was brought together, and this in spite of many restrictions incident to traveling in a country under military rule.

From May to November 1918, Prof. E. Stechow, of the curatorial staff of the Museum, commissioned to make zoological researches in Lithuania forwarded 703 bird skins to the Department, and this collection, supplemented by 228 specimens donated by Dr. H. Krieg, formed the subject of an excellent memoir by H. Sachtleben[2] to whom the material had been entrusted for study.

Under the writer's administration, from 1908 to 1922, numerous exchanges were made with other museums and private individuals, notably the Royal Swedish Museum at Stockholm (birds from Sweden and Juan Fernandez), the American Museum of Natural History in New York, Count Hans von Berlepsch, E. Lehn Schiøler (Danish birds), Count Joseph Seilern, the Museum of Comparative Zoology, Cambridge (North American species), the Carnegie Museum, Pittsburgh, and the Muséum d'Histoire Naturelle, at Paris. From the University Museum at Würzburg a few types of Hahn (*Mochaeropterus regulus*) and Wagler (*Diglossa baritula, Sittace petzii*) were also obtained in exchange.

When the writer, in September 1922, relinquished his post, the total number of birds in the Department was a little over 55,000, of which 14,000 were mounted.

Since then, we are informed by Dr. A. Laubmann, now Curator in charge of the bird collection, an important addition has lately

[1] See Stresemann, Avifauna Macedonica. Munich 1920. 8°, pp. xxiv + 271, with six plates.

[2] See Abhandl. Bayr. AK. Wiss., math. phys. Kl., Suppl., No. 1, p. 1–232, 1922.

been made by about 1700 bird skins received from Dr. H. Krieg's Pilcomayo Expedition, while various smaller lots were acquired from Chile (77 specimens), Misiones (30), Madagascar (110), Hungary (115), and Mount Elgon, Kenya (100). The late Ex-Princess Theresa of Bavaria bequeathed her private collection of (200) South American birds to the Museum which thus came into possession of the type of *Dendrexetastes paraensis* Lorenz.

There are in the collection approximately 400 type specimens described by Hahn, Spix, Swainson (one), Wagler, Wagner (two), Oppel (one), Lesson (one), Pelzeln (one), Cabanis and Heine (one), Dalmas, Parrot, von Tschusi (one), Hellmayr, Seilern, Stresemann, Laubmann, Sachtleben (three), Kollibay (two), Lorenz (one), Götz (one), and Von Ihering (two). In summarizing, it may be said that the Department possesses one of the finest collections of Palaearctic birds in existence and a fair representation of the neotropical fauna. Certain families, such as Hummingbirds, Toucans, and Manakins are especially rich in series and rare forms.

Among rarities may be mentioned two Great Auks, four Passenger Pigeons, one Labrador Duck, and one Eskimo Curlew.

Field Museum of Natural History,
Chicago, Illinois.

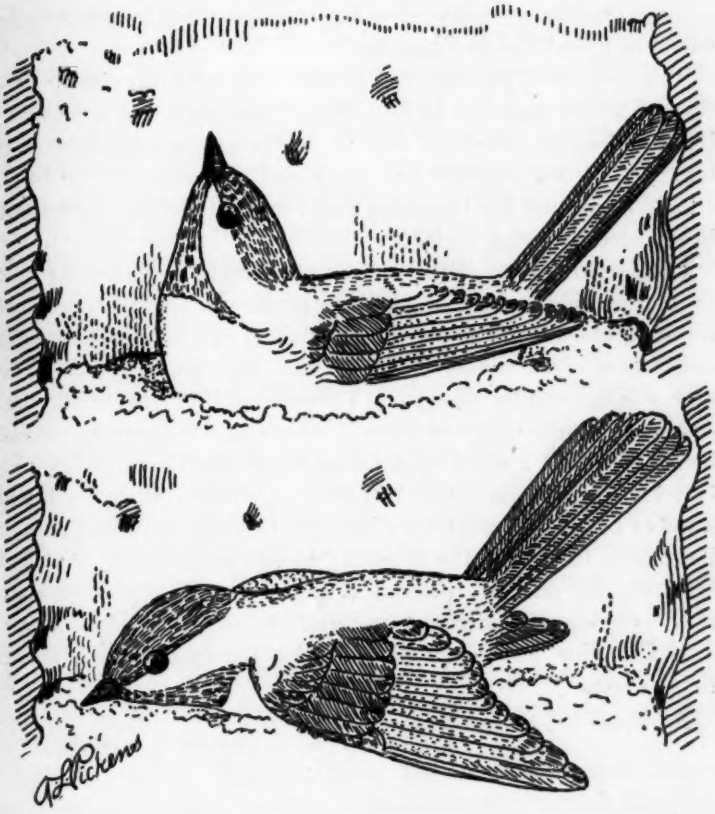
AUDITORY PROTECTIVE MIMICRY OF THE CHICADEE.

BY ANDREW L. PICKENS.

ENTHUSIASTIC mimicry students have gone out of the way to point out similarities of form among animals. Though many have carried the theory too far, nevertheless, scientists are agreed that the facts of mimicry must be faced, though they are not agreed on the explanation. Wallace has even pointed out a number of cases of mimicry in form and color among birds, an admirable digest of Wallace's findings occurring under "Mimicry," in Newton's 'Dictionary of Birds.' No such cases, apparently, are found in the United States, but the mimicking of the serpent's hiss among birds is familiar to all careful bird students. Young Flickers and adult Geese are well-known hissers, but the Carolina Chicadee is a past-master at the art.

One of the most courage-taking sounds that I have encountered in my field studies is the hiss of the copperhead snake, (*Agkistrodon mokasen*). It lacks the animating interest we find in the ringing alarm of the rattlesnakes, and fills one with a kind of nausea. The reptile sounds as if it were inhaling a good part of the surrounding atmosphere and then discharging it in one sudden, explosive puff. There is nothing sedate and leisurely about it. Now the best imitation of that sound that I have heard is the explosive hiss of the brooding Carolina Chicadee (*Penthestes carolinensis*). This is apparently the only form that breeds locally, in fact the only one that I have observed here at all, though one student gives pretty good hypothetical evidence of having seen *P. atricapillus* in winter. Many have heard the splendid bluff the diminutive bird makes, and it is sufficient to startle even the initiated who have heard it before, and who may also know that the copperhead is not celebrated as a climber, but I do not recall having seen or heard a description of the method used to produce the sound. To be seen to advantage, the bird must perform in a fairly well-open cavity into which a sufficient amount of light can be reflected.

In preparing for the hiss, the bird, as seen from above, appears to rise slightly on the legs as if to give a freer swing to the movements of the body, while the head is thrown back over the shoulders at a right angle, or even an acute angle. The attitude of the bird is one of tense rigidity. Then, as if with a great effort, the bird



nods the head strongly forward. The whole body, with the wings and tail, seems affected. The tail moves, the expanding wings shoot out sideways and strike the surrounding wood inside the cavity, and as the head comes stiffly down the bird emits a strong hiss or puff strikingly like that of the copperhead. The head is brought down quite upon the surface of the lining in front

of the bird, and while the noise appears to be produced in part by the stiff rustling of the feathers, and the reverberations within the hollow of the surrounding wood, much, or the greater part of the noise certainly comes from the mouth and throat, and the hiss sometimes dies out in a faint little vocal squeak. All combine to make a fearful noise, and while mimicry is of course an unconscious, or better, an unintentional occurrence, there is no mistaking what the noise is to be taken for.

This method of protection probably arose by evolutionary process from the common, in fact almost universal, nest-protecting habit of feigning lameness that we find among small birds, as is indicated by the outstretched wings and the action of the head. I have illustrated the beginning and the ending of the movement in the accompanying sketch.

I regretted that one little mother unwillingly sacrificed her nest to my scientific curiosity. I had her perform too many times, and returned one day to find the eggs tucked carefully out of sight under part of the lining that had been pulled over them. The nest was apparently deserted. I wondered if this were the first step in the method one or more Warblers use, in covering up and laying on top of a set of eggs among which the Cowbird has laid. Not knowing it was there, I once accidentally dropped a bit of wood or bark into a post containing a Bluebird's nest, and though I carefully fished out the offending matter and one egg that had been slightly cracked, without touching any of the other eggs, they were buried under new material and other eggs laid above. This Chicadee, however, while covering the eggs did not return to lay others.

202 Grove St., Greenville, S. C.

HABITS OF THE LIMPKIN IN FLORIDA.

BY DONALD J. NICHOLSON.

Plate XI.

I HAD been searching for the nests of the wary Limpkin for many years but it was not until April 12, 1922 that I found my first occupied nest of this quaint bird. My companion, Fred Walker had shot a Louisiana Heron for mounting and the dead bird fell in the saw-grass close to me, startling a Limpkin which flew silently away. Thinking that this probably had a meaning I went to the spot from whence it arose and in a cluster of saw-grass found the nest imbedded in the clump with four eggs slightly incubated. The nest was composed entirely of dead saw-grass blades, deeply cupped and well concealed from view when a foot away. The site was a huge marsh miles in extent with patches of saw-grass, willows, lily pads, and grass, leading from Lake Apopka, in Lake County, Florida. The nest-clump was on the edge of open water, giving the bird a view and a chance to escape in case of danger. This is the usual position chosen.

There are a few pairs of Limpkins in the big marshes around this lake but they are by no means common. Several years before I had explored the Wekiwa River which runs between Apopka and Sanford in Orange and Seminole counties and found several old nests built up in the overhanging branches of trees along the river containing egg shells which I identified as belonging to the Limpkin. Years ago the Oklawaha River was a favorite breeding ground but few are now to be found there.

It was not until April 27, 1925, that I found a secluded, wild spot where Limpkins were to be found in considerable numbers. On this particular day it rained practically all day and my guide and I waded through mud and water for four hours searching for the nests. This was in the big St. Johns Marsh at the head of the St. Johns River where the Everglades begin. The marshes were many miles in extent and so similar that it was an easy matter to become confused and lost. The birds were breeding in the flags,

grass and saw-grass which were surrounded by hundreds of clumps or islands of myrtle.

We found five occupied nests which held five and six eggs and one with eight eggs. Two distinct nesting-sites were used. The majority of the birds nesting in the grass or among flags with the bottom of the nests touching the water, with no concealment from above. Invariably the nest was placed on the edge of an alligator cave, whether it was in saw-grass, or among grass or flags. This custom is undoubtedly one of protection against racoons or other animals which can smell the alligator and dare not venture too near, at least this is what I attribute this habit to, but nevertheless we found that three of the nests had been rifled and the eggshells scattered nearby. The partial sets were being cared for by the parent. I believe the eggs were broken by water-rats which are numerous and not by Crows as the latter usually carry the eggs away and do not eat them at the nest.

On this date some eggs had hatched and the young had gone. My guide told me that in comparatively dry seasons the birds nested mostly in the grass or flags on top of the water, but when much rain occurs and the water is high the saw-grass clumps are utilized. The nesting grounds are generally out about a mile from the edge of the marsh and thence on many miles beyond.

On the trip it was impossible to take any pictures because of the rain, and I was especially desirous of obtaining photographs of nests touching the water as this form of nesting, I believe, is known to but few ornithologists. So late in March 1926, I arranged to take an eight day trip with this same guide to this same locality. This time I arrived right in the midst of the breeding season and everything was in full swing. March evidently is the height of the nesting season, or at least it was this year, and I had the opportunity of examining full sets, partial sets, nests in construction, young just emerging from shells, and young swimming. As these young had left the nests several days prior, the birds must have commenced nesting by the middle of February.

The number of eggs ranged from four to eight in complete sets, but only one this year was found with eight eggs, although three nests were found with seven. Six was the common number. Several nests were found with young emerging from the shell but

Photo by A. A. Allen.

1. A FLORIDA LIMPKIN OVER IT'S NEST.

Photo by D. J. Nicholson.

2. NEST AND EGGS OF LIMPKIN, BREVARD CO., FLA.

it was raining each time, and desiring pictures of young in the nest, I returned next day, only to find that they had left to explore their new world. It is interesting to know that the eggs are not sat upon until the last one is deposited, in practically all cases, regardless of the size of the set. This is in direct contrast with the Purple Gallinule which commences to incubate as soon as the first egg is laid. Whether the sun is too strong for their eggs, as the Gallinule seldom has shelter for its nest, or because its eggs are often eaten by Crows I cannot say, but I believe it is due to the latter cause. However, nearly every set of Gallinule's eggs taken, shows a wide variance in the incubation, while in those of the Limpkin it is about equal in each egg. It might be well also to compare eggs of the Wayne's Clapper Rail to those of the Limpkin. This Rail like the Gallinule begins setting before all the eggs are laid and shows great difference in incubation in many sets examined. Limpkins differ from Clapper Rails in the matter of the disposal of empty egg shells. The former leave the shells in the nest after the young have gone, but the latter do not, and no shells are found. The Gallinule leaves its shells in the nest.

Limpkins are not suspicious about their nest, as was proven in two cases where partial sets were collected. Having occasion to return next day, I took a look at the nests and found that another egg had been deposited in each nest. In this respect they differ greatly from the Clapper Rails, for they desert the nest and break the remaining eggs.

There are two types of Limpkin eggs; a light grayish-white ground-color and a buffy-brown type, the shades varying slightly in different sets between these two colors. The markings differ greatly, and quite different patterns occur in the same set, but I have never found light and dark-colored eggs in a set. Shapes vary considerably from long even-ended eggs, to almost spherical ones, but most have blunt points. The shell is smooth and with a slight gloss in most cases, whether fresh or incubated, but some eggs will be found with no gloss.

When you invade their domain your presence will be announced by the loud weird cries of the birds, which carry for a considerable distance, when uttered from the top of some bush or while in flight, and are constantly repeated until you leave the territory.

They rise from the ground and do not have to get a running start like the Sandhill Crane, and with a quick upward stroke exactly like a Crane, fly low over the water and alight on some bush or elevated spot, sometimes crying as they go. Early in the morning the marshes resound with their peculiar cries, and they call throughout the day, especially before rains. All through the nesting season their calls are heard at night everywhere over the marshes and seem even more incessant than by day. In flight, which is slow and measured, the legs are kept straight out behind with the neck stretched full length, and you would have to take a second look to be sure the bird was not a Crane.

Limpkins nest in colonies but the nests are not really close together, though at times you will find three or four around one waterhole. In one particular colony near Fellsmere they nested mostly in Myrtles, growing in water, the nests being a few inches above the water. These nests were made of dead myrtle sticks and were lined with a few grasses or unlined, with the eggs lying on the bare twigs. This type of nest prevailed in this particular district as the water was higher at this place and heavy rains frequent, which accounted perhaps for the tree-nesting habit. However, several nests were found in saw-grass clumps, but in all cases on the edge of the myrtle clumps, or on the edge of saw-grass patches, giving a clear view for the sitting birds.

Sitting birds were rarely flushed; they either flew off the nest while you were at quite a distance, or else sneaked off unseen. Several times however, a female flushed at a distance of eight feet from a nest containing incubated eggs and also, from fresh eggs. If young are about, they will use the trailing wing ruse and endeavor to lead you away, and in one instance during a severe downpour of rain, I came upon a Limpkin mothering young on top of grass over the water. She uttered her call notes rapidly and fluttered around close to me, while the black, downy young swam to hiding places. This was about April 4 and the young were about a week old. Two other nests contained seven eggs each which were hatching.

The young are very similar in color and general appearance to Rails and Gallinules. They are shiny black with soft silky down, dark mandibles, legs and feet.

Limpkins are found only where a certain species of snail breeds as it constitutes their principal, if not their sole food. However, as I have never examined the stomachs of any specimens I cannot say positively. Scattered over the expansive marshes in their domain, one finds piles of empty snail shells here and there on top of grass where it has been bent down to support the feeding bird, but never have I found an empty shell in a nest with eggs unless they were hatching. This I saw once and it seemed evident that the young were being fed upon snails at a tender age. As the Everglade Kite feeds solely upon these snails the two species are frequently found nesting together, and, apparently, without discord. I have never seen the Limpkin in combat with any other species, nor have I seen it quarrel with its own kind. Evidently it is not of a pugnacious nature. The Horned Owl is likely its only feathered enemy.

The breeding period probably ends in May, as my guide who is in the marshes much of his time, stated that they were through laying by June and no nests were found that late.

As long as the snails have a chance to breed, the Limpkin will exist as it seeks the wildest and most remote places to nest, and we shall have this bird with us for many years to come unless the ingenuity of man contrives a way in which to reclaim all our watered areas. That is not probable, and barely possible. We have plenty of tillable land without trying to reach out for more, but "progress" supersedes ornithology, and our voice of protest is drowned, when it comes to fighting the millions of dollars used by the capitalists in their drainage projects in Florida.

Dr. A. A. Allen has kindly consented to my using his excellent picture of the Limpkin leaving the nest, which was taken in Brevard county.

Orlando, Florida.

OBSERVATIONS AND BANDING NOTES ON THE BANK SWALLOW—IV.

BY DAYTON STONER.

SEASON OF 1927.

A continuation of the banding work on the Bank Swallow, begun by the writer and Mrs. Stoner at the Iowa Lakeside Laboratory in northwestern Iowa in the summer of 1923, was found possible in the summer of 1927 when, between June 15 and July 18, 1008 individuals were banded.[1] In this lot, 208 adults and 800 immature birds were represented, thus bringing the total number of individuals of this species banded by us in the Okoboji region to 2432; about 21% of these are adult birds.

The greatest number of birds banded in one day was on July 9 when 90 young were furnished with the metal tags. The greatest number of adult birds banded in one day was 24. Our banding was done at 30 substations of which 18 had been worked in previous seasons; all were within a radius of 12 miles of the Laboratory. Some of these comprised only two or three burrows but most of them were in roadside cuts with from eight to twenty burrows each, and in large gravel pits containing well over a hundred burrows.

General Remarks.—Many new colonies had been established since the preceding season; apparently the birds were attracted by the precipitous banks of roadside cuts a considerable number of which had been excavated recently in carrying out an extensive road construction program.

In burrows near the top of a bank or on the face of a bank exposed to a great amount of afternoon sunshine the young, as a rule, were a little farther along than the young inhabiting burrows where these conditions did not prevail. Perhaps the added warmth of the soil accelerates not only the development of the eggs but also the growth of the young.

One item of interest relating to birds which are excavating is worthy of mention. The claws of many of the birds thus engaged

[1] Reports on previous years' observations appear in 'The Auk,' XLII, No. 1, 1925, 86–94; XLIII, No. 2, 1926, 198–213, and XLV, No. 1, 1928, 41–45.

often become much worn and blunt from the constant scratching and burrowing in the gravel banks. Sometimes individuals are found with the claws so blunt and rounded that they are of little use in clinging. The usual form, length and curvature are soon attained once the period of excavation is over.

Quite by accident, an interesting accomplishment of these birds was discovered. In a large unworked gravel pit three miles northeast of Spirit Lake, a pond of water about a hundred feet long and forty feet in width marked the area where the deepest excavation had been made by workmen in removing gravel. A large number of Bank Swallows were nesting in the sheer sides of the pit and the young here, on June 28, were more fully developed than in other pits where incubation had been frequently interrupted. Some of the young were able to fly well, others only a little. Several of the latter group were dislodged from their burrows and, being unable to maintain themselves in the air, dropped into the water. Without the slightest hesitation these birds struck out strongly, swimming with quick, powerful strokes which gave a sort of bobbing movement to the swimmers. Some of the birds swam from eight to ten yards and appeared to be none the worse for the experience. Three of the birds upon arriving at the edge of the pool were tossed lightly back into the water and immediately they swam out as before; once again they were tossed back into the pond and with apparently as much energy as ever they swam for the shore. Thus was demonstrated the fact that even young Bank Swallows with more or less soft and downy feathers can swim for a considerable distance before becoming exhausted, the front limbs serving as the means of propulsion. May not this ability be of marked survival value in adult birds should they be overtaken by difficulties in migrating over large bodies of water?

Among the hundreds of adult birds handled during our five seasons' work, but one major deformity has been encountered. No. 97351A, taken on July 4, from a burrow containing another adult, had a malformed bill, the upper mandible being somewhat enlarged, thickened at the base and elongated into a point so that its tip did not appose that of the lower mandible but crossed it to the right. The anomaly was suggestive of the beak of a Crossbill in miniature. In spite of this deformity the bird seemed to be in

good condition although it must have been forced to modify somewhat its ordinary method of securing food.

An analysis of the data obtained in this and preceding summers suggests a breeding season somewhat longer than was at first suspected;[1] for, young have been found as early as June 15 (our earliest date of observation), while newly hatched young have been discovered as late as August 5; and fully fledged young ready to leave the nests have been found as early as June 28 and as late as August 7. Without doubt the rearing of two broods in a season is a common occurrence.

Weight of Young Birds. In an effort to ascertain the rate of increase in weight of young Bank Swallows, the occupants of a number of nests were banded so that chronological records for a given individual could be obtained. The observations made on two families are typical and while not complete they illustrate the important features. Nos. 97282A–97285A refer to a family of four nestlings about seven days old when the first reading was made on July 3, while Nos. 97347A–97350A refer to another family of four which were about five days old when the first reading was taken, also on July 3. The observations were made at approximately the same time of day (5:00 P.M.), on alternate days and continued until the birds were ready to leave the nest; weight readings are indicated in grams.

TABLE OF WEIGHTS.

No.	July						
	3	5	7	9	11	13	15
97282A	16.8	17.6	18.7	18.5	16.1		
97283A	16.0	17.0	18.3	18.0	17.3	15.1	
97284A	16.8	17.7	18.3	18.5	17.3		
97285A	15.9	17.7	19.4	18.5	18.0		
97347A	12.2	15.4	18.4	—	19.0	18.0	17.0
97348A	12.1	15.0	17.4	—	19.0	18.0	17.3
97349A	9.0	13.0					
97350A	9.1	13.6					

[1] 'The Auk,' XLIII, No. 2, 1926, 200.

From these and other available data we conclude that the weight of young birds does not increase gradually until maturity is attained. On the contrary, it increases fairly regularly although not rapidly until about eleven to thirteen days after hatching when a decrease is to be noted. This seems to be due primarily to a resorption of fat which develops but which gradually diminishes as the time for leaving the nest approaches. Even at the time of initial flight the average weight of the birds observed in these experiments was somewhat greater than the average for adults, so that following that important event further weight reduction occurs.

Repeats.—Recoveries of birds banded during the season covered by this report are termed "Repeats." These total 101 of which 87, including four fatalities, were furnished by immature birds; the remaining 14 were adults. Eight immature birds repeated more than once. Of course a great many more repeats might have been secured by visiting and inspecting nests of banded birds frequently but no effort was made to obtain records in that manner.

It seems quite unnecessary to set forth all the repeats here but twenty-two of the most interesting and informational are cited together with remarks concerning them.

Remarks on Repeats.—It seems apparent that breeding birds sometimes change their abode even after having arrived on the breeding grounds and established a home. The change may take place suddenly and for various possible reasons but the laying of eggs and their incubation is of paramount importance to the bird for usually little time is lost when this change of abode occurs. Nos. 61148A and 61152A afford examples of this feature.

The occasion of the second recovery of No. 97227A affords a good illustration of the intermingling of families after flight ability is attained when members from three families, all reared in adjacent burrows in the same gravel pit were taken together. However, it is to be noted that no family was *completely* represented at this time, thus further illustrating the inclination of the young to wander.

Still another good illustration of the intermingling of young from different families is afforded by the data on No. 97284A. On the

TABLE OF REPEATS

No. and Age	Date and Locality of Banding	Date and Locality of Recovery	Remarks on Recovery
61148A. Ad.	June 16. 1 mile S. E. Arnolds Park	July 16. 3 miles away	Incubating on both occasions
61152A. Ad.	June 16. 1 mile S. E. Arnolds Park	July 24. 9 miles away	Incubating when recovered
61153A. Ad.	June 16. 1 mile S. E. Arnolds Park	July 11. Same pit but different burrow	Incubating when recovered
97170A. Juv.	June 29. 3 miles N. E. Spirit Lake	July 7. Same pit but different burrow	3 unbanded birds and 2 Imm. repeats from same family in nest
97176A. Ad.	June 29. 1 mile S. W. Milford	July 7. 8 miles away	3 Imm. repeats from family different in nest
97210A. Fldg.	June 30. 5 miles W. Spirit Lake	July 7. 3 miles away	No repeats from other 4 members of family
97227A. Nstlg.	July 1. 1 mile S. E. Arnolds Park	July 11 & 13. Same	On July 11, other 5 members of family and Imm. unbanded bird in nest. On July 13 repeats from 2 other families in nest
97284A. Nstlg.	July 1. ½-mile S. Ia. Lake. Lab.	July 16. Same pit, different burrow July 17. Same as last July 18. Same as last	

TABLE OF REPEATS—*Continued*

No. and Age	Date and Locality of Banding	Date and Locality of Banding	Remarks on Recovery
97300A. Juv.	July 2. 2 miles E. Spirit Lake	July 18. 7 miles away	
97305A. Fldg.	July 2. 2 miles E. Spirit Lake	July 12. 3 miles away	In burrow containing 5 unbanded young
97307A. Fldg.	July 2. 2 miles E. Spirit Lake	July 12. 3 miles away	
97554A. Juv.	July 7. 3 miles N. E. Spirit Lake	July 16. 6 miles away	Another repeat in burrow
97560A. Imm.	July 7. 3 miles N. E. Spirit Lake	July 9. Same pit	
97585A. Fldg.	July 7. ½-mile S. Ia. Lake. Lab.	July 18. Same	4 repeats from 3 other families in same burrow
97624A. Juv.	July 8. 1 mile S. E. Arnolds Park	July 13 and 16. Same	
97748A. Imm.	July 11. 1 mile S. E. Arnolds Park	July 13. Same	2 repeats from same family and 2 more from 2 other families in same burrow
97757A. Imm.	July 11. 1 mile S. E Arnolds Park	July 13. 11.00 A.M. Same	In burrow with an unbanded bird and a family of 4 Juv. repeats
		July 13. 2 P.M. Same pit but in burrow 12 yds. away	In burrow with 4 other Imm. repeats from 2 families

three occasions of its recovery this bird was taken from the same burrow which was about twenty-five feet from the one in which it was reared. When first recovered, repeats from two other families together with an unbanded bird were with it in the burrow; four families were thus represented. The next day it was recovered alone, while on the following day it was again recovered with representatives of three *altogether different* families. Thus, within a period of thirty-seven hours, representatives of at least seven families of Bank Swallows had visited this burrow, although at no one time of our observations was any family *completely* represented therein.

Fledglings No. 97305A and 97307A were two of a family of four. In this case *two* of the members of a family *remained* together and were *recovered* together from a burrow three miles away and which also contained five unbanded birds.

No. 97560A was recovered from a different burrow than the one in which it was originally captured; this burrow also contained four banded young together with an immature repeat from still another burrow.

Repeat No. 97585A is of considerable interest for it, too, affords an unusual example of the mingling of members of different families after flight ability has been acquired. The data on the four birds recovered with it are as follows: No. 97284A; one of a family of four; banded as a nestling from the same gravel pit, July 1. Nos. 97761A and 97762A; two of a family of four; banded as juvenals from the same gravel pit July 11. No. 97700A; banded as an immature bird in a gravel pit ten miles away on July 9.

No. 97624A was one of a family of five; on the occasion of its first recovery an unbanded immature bird and an immature repeat were in the burrow with it. At the time of its second recovery a member of its own family and an immature repeat from still a different family were found with it.

Many similar findings could be cited from our records and they further substantiate the conclusion that after flight ability has been acquired intermingling of the young of different families occurs, not only in a given gravel pit but also among the inhabitants of burrows separated by a distance of from three to ten miles.

Returns.—From the inception of our work down to the close

of the 1926 season, 1424 Bank Swallows were banded in the Okoboji region. Excepting the casualties, at least some of which were known, this number was available for returns in 1927. Fourteen returns, all from this region, have been reported previously, from the 1176 birds available. During the season covered by this report, 15 additional individuals from 1923, 1924, 1925 and 1926 bandings were recovered, thus bringing the grand total of returns to 29 and increasing the recovery rate to a little more than 2%. A detailed summary of these returns is here indicated in tabular form.

TABLE OF RETURNS ON BANDED BIRDS

Yr.	No. Banded	No. Returns	Total
1923	76	1 in 1924 1 in 1927	2
1924	207	5 in 1925 1 in 1926 1 in 1927	7
1925	893	7 in 1926 6 in 1927	13
1926	248	7 in 1927	7
1927	1008		

It is of interest to note that the very first bird taken in the 1927 season was a return. The data on this and subsequent ones follow.

No. 5724A. Adult; banded June 16, 1925, in a roadside cut five miles southwest of the town of Spirit Lake. Recovered June 15, 1927, three miles north of the Iowa Lakeside Laboratory and about two miles, air-line, from the place of original capture. At the time of recovery the bird was brooding six young about thirty-six hours old.

No. 8510A. Fledgling; one of a family of five; banded June 25, 1925, in a gravel pit two miles east of Spirit Lake. Recovered June 18, 1927, as an incubating bird in a roadside cut five miles west of the place of original banding.

No. 24648A. Immature; taken July 8, 1925, from a burrow in a gravel pit one mile southeast of Arnolds Park, together with an adult bird and another immature one. Recovered July 1, 1927, in the same gravel pit but from a burrow about twenty yards northeast of the one from which it was banded. Just previous to its recovery the bird had flown into the burrow with an unbanded adult with which it may have been mating.

No. 24747A. Juvenal; one of a family of five; banded July 10, 1925, in a gravel pit at the north edge of the town of Spirit Lake. Recovered June 28, 1927, in a small pit 100 yards from the Iowa Lakeside Laboratory grounds, and more than five miles from the place of original banding. The bird was recovered from a burrow in which there was no nest and it was probably simply resting there.

No. 24823A. Immature; banded July 13, 1925, in a gravel pit one mile southeast of Arnolds Park. Recovered June 16, 1927, in a burrow in an adjoining gravel pit a few yards west of the one from which it was originally taken. Incubating at the time of recovery.

No. 36320A. Adult; banded July 6, 1926, in a gravel pit one mile southeast of Arnolds Park. Recovered June 18, 1927, from a burrow in a roadside cut about seven miles, air-line, from the place of original banding; the bird was incubating. On July 13, 1927, the bird was again recovered from a burrow in a gravel pit about twenty yards east of the place of original capture.

No. 36324A. Juvenal; one of a family of four; banded July 6, 1926, in a gravel pit one mile southeast of Arnolds Park. Recovered June 27, 1927, from a burrow in a roadside cut about six miles from the place of original banding; young in the nest. Just previous to its recovery this bird had flown into the burrow with an unbanded adult.

No. 36367A. Adult; another adult (No. 36368A), in burrow with it; banded July 8, 1926, in a gravel pit one mile southeast of Arnolds Park. Recovered as an incubating bird, June 16, 1927, in a gravel pit three miles from the place of original banding. On July 12, 1927, the bird was again taken from a burrow in a roadside cut about nine miles, air-line, from the place of recovery on June 16, and six miles from the place of original banding. On this occasion the bird was again incubating.

No. 36375A. Adult; another adult (No. 36376A), in burrow with it; banded July 8, 1926, in the gravel pit one mile southeast of Arnolds Park. Recovered July 1, 1927, in the same gravel pit but from a burrow fifty yards south of the one in which it was originally captured.

No. 36401A. Immature; able to fly well; another immature (No. 36402A), in same burrow; banded July 9, 1926, in a gravel pit two miles east of the town of Spirit Lake. Recovered as an incubating bird on July 16, 1927, from a burrow in a gravel pit about 100 yards south of the place of original banding.

No. 61019A. Adult; banded July 12, 1926, in a small gravel pit one mile southwest of Milford. Recovered July 4, 1927, in a gravel pit about three miles, air-line, from the place of original banding.

No. 61119A. Nestling; one of a family of four; banded July 20, 1926, in a gravel pit one mile southeast of Arnolds Park. Recovered June 16, 1927, as an incubating bird from a burrow in an adjoining gravel pit and about fifty yards south of the one in which it was reared. Another adult, banded as No. 61148A was in the burrow with it. On July 4, 1927, the bird was again taken from the same burrow and on July 15 it was recovered once again from that burrow as an incubating bird. It is of interest to note that on the following day, July 16, 1927, No. 61148A was taken as a repeat from a burrow in a gravel pit three miles away where it too was incubating.

No. 73658. Adult; banded July 8, 1924, in a gravel pit at the north edge of the town of Spirit Lake. Another adult was taken from this burrow a few minutes previous to the capture of No. 73658. Recovered June 30, 1927, from a burrow in a roadside cut about a mile, air-line, from the place of original banding; it had just flown into the burrow with food for young.

No. 115726. Fledgling; one of a family of five; banded July 9, 1923, from a burrow in a small roadside gravel pit two miles northeast of the Iowa Lakeside Laboratory. Recovered July 5, 1927, as an incubating bird from a burrow in a gravel pit about two and one-half miles south of the place of original banding.

No. 141890. Nestling; one of a family of five; banded July 9, 1925, in a gravel pit one mile southeast of Arnolds Park. Re-

covered as an incubating bird, June 16, 1927, from an adjacent pit about thirty yards northwest of the place of original banding.

Remarks on Returns.—Although 1424 marked birds were available for returns, this represents but a fraction of the total number of Bank Swallows present in the region during the four seasons preceding that of 1927. The 29 returns obtained from these, suggest then, that the proportion of birds returning to breed in the same general region in which they had previously bred or been reared, is greater than at first believed.

Among the birds banded, only one is known to have attained as great an age as four years. No. 115726 was recovered as an incubating bird four days less than four years after it was tagged.

Among all the 29 returns secured, no representative has been taken more than one season. This suggests a considerable wandering of individuals within the breeding range as well as, perhaps, a rather high mortality rate.

Among the scores of families of young birds banded, no two members of any one family have ever been recovered as returns. This again seems to indicate not only a considerable amount of wandering and little uniformity in selecting a nesting region, but also that at least the *immediate* place where the birds were hatched has little or no attraction for most individuals. Family ties are left behind with the attainment of flight ability.

Further evidence of polygamy is suggested by the actions of Nos. 61119A and 61148A. On the date of its first recovery, about a year after it was banded, No. 61119A occupied a burrow with an unbanded bird which was then furnished with band No. 61148A. At the time of its second recovery, eighteen days later, No. 61119A was alone in the burrow and at the time of its third recovery, eleven days after the second recovery, it was incubating. Meanwhile, No. 61148A was also incubating in a burrow three miles away.

The colony life of the Bank Swallow is very complex but loosely organized and the behavior of individual birds comprising a colony appears to follow no set plan.

State University of Iowa,
Iowa City, Iowa.

BRADSHAW HALL SWALES, 1875–1928.

A BIOGRAPHICAL NOTICE.[1]

BY CHARLES W. RICHMOND.

Plate XII.

DEATH removed the moving spirit and organizer of the Baird Ornithological Club, of Washington, D. C., when Bradshaw Hall Swales passed away at his Albemarle Street home on January 23, 1928, after an illness of many months. The disorder which finally resulted in his death began to manifest itself about the end of September, 1926, when he was obliged to cancel his reservation for the trip to Ottawa to attend the meeting of the American Ornithologists' Union, and to enter a local hospital for treatment. After a few weeks of comparative freedom he was again in the hospital, and thenceforth became a semi-invalid at home, alternating with occasional visits to the hospital, spending his days resting in an easy chair, feeding and observing the birds that gathered on a shelf outside his window. Here he received his friends up to within a week of the end.

Mr. Swales was born in Detroit, Michigan, June 30, 1875, the second child of Charles Everett and Susan Matilda Swales. His early life was passed in Detroit, and his love of birds developed there at an early age. He graduated from the University of Michigan, taking the degree of LL.B. in 1896, and LL.M. in 1897, and in the latter part of 1897 was admitted to the Michigan bar and began the practice of law in Detroit. In the spring of 1898 he went to Pasadena, California, to engage in the practice of law, but later in the same year was obliged to return east on account of ill health. While in California, he made the acquaintance of Dr. Joseph Grinnell, and through him joined the Cooper Ornithological Club, as one of its early eastern members.

It is uncertain how or when Swales became interested in birds, but his devotion to ornithology began very early, for his first published effort, on the "Golden-crowned Thrush," appeared in

[1] Contribution from the Baird Ornithological Club.

the 'Oölogist' for October, 1889, when he was not much more than fourteen years of age. In his second item, published in 1891, he added an appeal to those better informed, saying he wanted to "obtain a list or book of Michigan birds." This was two years before the appearance of Cook's "Birds of Michigan" and literature on the subject was scarce, as well as scattered. He was obliged to struggle along with other local amateurs in gaining what ornithological knowledge he could, but it was up hill work, with no expert ornithologist at hand to turn to for help, and in later years he frequently commented on his early difficulties. As an aid to present and future generations of Michigan bird students, he presented a collection of about 2000 bird skins to the Zoological Museum of the University of Michigan at Ann Arbor, and at his death left his very considerable ornithological library to the same institution. He had accumulated a large amount of data on the birds of his state, including all published records of importance, as well as a nearly complete bibliography of Michigan birds, arranged on cards; these went with his library to the museum at Ann Arbor.

In spite of the difficulties encountered in his early studies, Mr. Swales persisted, sending his observations to the bird magazines of the day, and before he was twenty-one years old had a list of thirty-four titles to his credit, quite a remarkable showing for a young man.

During his college years he sustained an injury in athletics, which necessitated surgical attention, and from that time on he was obliged to undergo hospital treatment at intervals; this, with a subsequent protracted case of biliary calculi, resulting in another operation, had a tendency to reduce his vitality and limit his ornithological output.

From 1912 Mr. Swales was a member of the governing board of the Zoological Museum at Ann Arbor, and for a number of years was honorary assistant in ornithology there. He was also one of the founders and supporters of its "Occasional Papers."

After taking up his residence in Washington, Mr. Swales was, in 1918, appointed honorary custodian of the section of birds' eggs in the National Museum, and subsequently, in 1921, was made honorary assistant curator of birds. He became much

B. H. Swales.

interested in foreign birds and contributed many genera and species of rare birds to this museum through the Swales Fund, established for this purpose. For several years he was engaged in study of the birds of Haiti, and in conjunction with Dr. A. Wetmore had begun work on a report on the ornithology of this island, which was partly completed at his death. A new thrush, *Haplocichla swalesi*, commemorates his name there. Among his publications in ornithology, which number just over one hundred titles, probably the most important is a paper written in collaboration with P. A. Taverner dealing with the birds of Point Pelee, where with others he carried on observations on migration for a number of years. A list of his published papers is appended to the present notice. A large proportion of his writings are naturally on the birds of his native state, and many of them deal with his home district, Wayne County. Having grown up as an amateur, with no technical training in systematic ornithology, he could not divest himself of the feeling that he was only an amateur. On one of his early visits to Washington he found a new bird from Brazil during his examination of the collection, prepared a paper describing it and submitted it to Mr. Ridgway, who approved it, but he lacked the courage to publish it. It was this feeling of diffidence that limited his contributions in descriptive ornithology to collaboration with others.

In addition to ornithology, Mr. Swales was deeply interested in anthropology, especially in relation to the American Indian, and was also much interested in the early history of the West. Unknown to most of his friends he possessed one of the largest libraries extant concerning the history of base-ball and supplied much information on this subject to writers of the past few years.

Mr. Swales became an associate of the American Ornithologists' Union in 1902 and a member in 1909; member of the Cooper Ornithological Club in 1898; member of the Wilson Ornithological Club in 1903, and later was vice-president; member of the Delaware Valley Ornithological Club, Academy of Natural Sciences of Philadelphia, Washington Academy of Sciences, Biological Society of Washington, American Society of Mammalogists, American Anthropological Association (since 1909), Anthropological Society of Washington, and other organizations. He was a founder of the

Baird Ornithological Club and its president at the time of his death. In fact, he was more than a founder, for it was due almost entirely to Mr. Swales' activity and interest that the Baird Ornithological Club came into being.

Mr. Swales in 1902 married Mary Rhoda Medbury, of Flint, Michigan, who survives him. His remains rest near Flint.

BIBLIOGRAPHY.

1. Golden-crowned Thrush. Oölogist, VI, No. 10, Oct., 1889, 189. A short account, chiefly on nesting habits.
2. [Short Notes on Michigan Birds.] Oölogist, VIII, No. 6, June, 1891, 122. On Evening Grosbeak and Large-billed Water Thrush.
3. [Note on the Song Sparrow.] Oölogist, VIII, No. 8, August, 1891, 164. A nest found in an apple tree, about six feet from ground.
4. Michigan Notes. Oölogist, VIII, No. 9, Sept., 1891, 185–186. On the nesting of several species.
5. [Large set of eggs of Red-headed Woodpecker, etc.] Orn. & Oöl., XVI, No. 9, Sept., 1891, 144. Reports a set of eight eggs, and refers to late nesting of Woodcock.
6. Nesting Notes, 1890. Orn. & Oöl., XVI, No. 10, Oct., 1891, 148–149. Notes on breeding of sixteen species.
7. [Notes on Migration.] Orn. & Oöl., XVI, No. 10, Oct., 1891, 159. Dates of arrival of fourteen species.
8. The Nest of the Chestnut-sided Warbler. Oölogist, VIII, No. 12, Dec., 1891, 243–244.
9. The Horned Grebe (*Podiceps cornutus*). Oölogist, VIII, No. 12, Dec., 1891, 246–247. Notes on the nest and eggs, but the species proves to be the Pied-billed Grebe.
10. Albino Eggs of the Long-billed Marsh Wren. Oölogist, IX, No. 1, Jan., 1892, 11. Reports several sets of white eggs of this species.
11. Nesting of the Golden-winged Warbler. Oölogist, IX, No. 2, Feb., 1892, 45. Describes a nest and four eggs found by him May 25, 1891.
12. Michigan Notes. Oölogist, IX, No. 2, Feb., 1892, 45–46. Notes on the nesting of eleven species.
13. Horned Grebe on St. Clair flats. Oölogist, IX, No. 4, April, 1892, 96. On nesting habits, but is misidentification of the Pied-billed Grebe.
14. [A few Winter Bird Notes.] Orn. & Oöl., XVII, No. 4, April, 1892, 64. Notes on four species.
15. American Long-eared Owl. Orn. & Oöl., XVII, No. 5, May, 1892, 75. Notes on habits and nesting.
16. Rose-breasted Grosbeak in Wayne Co., Mich. Orn. & Oöl., XVII, No. 5, May, 1892, 75. Its habits and nesting.

17. [Eggs of Red-shouldered Hawk.] Orn. & Oöl., XVII, No. 5, May, 1892, 79. Describes a set of five eggs.
18. Nesting of the Virginia Rail (*Rallus virginianus*). Orn. & Oöl., XVII, No. 7, July, 1892, 103. Nest with ten eggs described.
19. [Nest and Eggs of the Phoebe.] Orn. & Oöl., XVII, No. 7, July, 1892, 111.
20. Albino Eggs of the Long-billed Marsh Wren. Orn. & Oöl., XVII, No. 8, Aug., 1892, 121. Same information as given under No. 10.
21. Birds of Wayne County, Mich. Orn. & Oöl., XVII, No. 8, Aug., 1892, 122–123. A brief account of the avifauna of this county.
22. [Tame Red-shouldered Hawks.] Orn. & Oöl., XVII, No. 10, Oct., 1892, 159. Notes on the habits of two birds raised from the nest.
23. Field Sparrow in Michigan. Orn. & Oöl., XVII, No. 10, Oct., 1892, 159. Record of two sets of eggs found by him.
24. [Brief Notes on Michigan Winter Birds.] Orn. & Oöl., XVIII, No. 3, March, 1893, 35. Notes on eight species.
25. Michigan Bird Arrivals. Forest & Stream, XL, No. 16, April 20, 1893, 337.
26. [Spring Notes.] Forest and Stream, XL, No. 19, May 11, 1893, 403.
27. American Woodcock. Orn. & Oöl., XVIII, No. 5, May, 1893, 79. Notes on its nesting near Detroit.
28. Detroit, Mich., 1891 Notes. Orn. & Oöl., XVIII, No. 7, July, 1893, 100–101. Nesting of various species. (The Olive-backed Thrush recorded proved to be Wilson's Thrush.)
29. [Nesting Dates for Certain Michigan Birds.] Orn. & Oöl., XVIII, No. 7, July, 1893, 107–108.
30. [Nesting Dates for Certain Michigan Birds.] Orn. & Oöl., XVIII, No. 10, Oct., 1893, 139.
31. The Least Bittern. Nidiologist, II, No. 8, April, 1895, 108–109. Its habits and nesting in Wayne Co., Michigan.
32. Michigan Notes. Nidiologist, II, No. 10, June, 1895, 139. Arrival dates for six species and notes on three others.
33. Dicksissel Breeding at Detroit. Nidiologist, III, No. 2, Oct., 1895, 19. Announces nest and eggs found by him on June 20.
34. Wood Thrush. Nidologist, III, No. 10–11, June–July, 1896, 115–116. Habits, song, etc., near Detroit.
35. A "Full Set of Rail's." Nidologist, III, No. 12, Aug., 1896, 142. A nest of the King Rail containing nine eggs of this species, seven of the Virginia Rail, and one of the Sora.
36. A Trip to Grassy Island. Bull. Mich. Orn. Club, I, No. 3–4, July–Dec., 1897, 30–32. Account of a collecting trip to this island in the lower Detroit River.
37. Bird Notes from Grassy Island. Bull. Mich. Orn. Club, III, No. 2, April, 1899, 20. Observations on migration and nesting of various species at this locality.

38. A Few Wayne County (Mich.) Notes, 1902. Wilson Bull., XIV, No. 4, Dec., 1902, 138–139. Notes on the occurrence of fifteen species, uncommon in this locality.
39. Notes on the Winter Birds of Wayne County, Michigan. Wilson Bull., XV, No. 1, March, 1903, 20–24. Comments on sixty-one species.
40. [Notice of the Re-organization of the Michigan Ornithological Club.] Wilson Bull., XV, No. 1, March, 1903, 35.
41. A List of the Land Birds of Southeastern Michigan. Bull. Mich. Orn. Club, IV, No. 1, March, 1903, 14–18; No. 2, June, 1903, 35–40; V, No. 2, June, 1904, 37–43. An annotated list of one hundred and sixty-five species, with dates of occurrence of unusual forms.
42. Minutes of Club Meetings. Bull. Mich. Orn. Club, IV, No. 1, March, 1903, 29–30.
43. Minutes of Club Meetings. Bull. Mich. Orn. Club, IV, No. 2, June, 1903, 61.
44. Minutes of Club Meetings. Bull. Mich. Orn. Club, IV, No. 4, Dec., 1903, 98–99.
45. The Evening Grosbeak in Presque Isle Co., Mich., Auk, XXI, No. 1, Jan., 1904, 82.
46. A Few Southern Michigan Notes. Auk, XXI, No. 1, Jan., 1904, 84–85. Notes on nine species.
47. White-winged Crossbill—A Correction. Auk, XXI, No. 2, April, 1904, 281. A record of breeding, repeated by several authors, proves to refer to the Goldfinch.
48. Minutes of Club Meetings. Bull. Mich. Orn. Club, V, No. 2, June, 1904, 51–52.
49. Breeding of the Broad-winged Hawk in Wayne County. Bull. Mich. Orn. Club, V, No. 3, Sept., 1904, 69.
50. Additions to List of the Winter Birds of Wayne County, Mich. Wilson Bull., XVI, No. 3, Sept., 1904, 82–83. Adds ten species to his previous list (see No. 39).
51. Wintering of the Red-headed Woodpecker at Detroit, Michigan. Auk, XXII, No. 1, Jan., 1905, 80.
52. Henslow's Sparrow in St. Clair County, Michigan. Auk, XXII, No. 1, Jan., 1905, 83–84.
53. The Northern Parula Warbler in Southern Michigan. Auk, XXII, No. 1, Jan., 1905, 84–85.
54. Notes on Several Rare Southeastern Michigan Birds. Auk, XXII, No. 1, Jan., 1905, 88–89. (By B. H. Swales and P. A. Taverner.) Data on the occurrence of four unusual species in s.e. Michigan.
55. Late Canada Geese. Bull. Mich. Orn. Club, VI, Nos. 1–2, March–June, 1905, 20.
56. Turkey Vulture (*Cathartes aura*) in Michigan. Auk, XXII, No. 4, Oct., 1905, 413.

57. Additions and Additional Data to a Preliminary List of the Land Birds of Southeastern Michigan. Wilson Bull., XVII, No. 4, Dec., 1905, 108–114. Three species are added to his earlier list, and additional records or corrections are made for twenty-three others.
58. Three Michigan Records. Auk, XXIII, No. 1, Jan., 1906, 100. Notes on the Barn Owl, Saw-whet Owl, and Goshawk.
59. Hermit Thrush in Winter. Wilson Bull., XVIII, No. 1, March, 1906, 26. Noted one on Belle Isle, Detroit River, Dec. 8, 1905.
60. Lesser Snow Geese in Michigan and Ontario. Auk, XXIII, No. 2, April, 1906, 219–220. (By P. A. Taverner and B. H. Swales.) Two specimens recorded, one from St. Clair Flats and the other from Point Pelee.
61. Remarks on the Summer Birds of Lake Muskoka, Ontario. Wilson Bull., XVIII, No. 2, June, 1906, 60–68. (By B. H. Swales and P. A. Taverner.) Comments on sixty species.
62. The Carolina Chickadee in Southern Michigan. Auk, XXIII, No. 3, July, 1906, 342. Records one from Wayne Co., believed to be the first authentic record for the state.
63. Recent Ornithological Developments in Southeastern Michigan. Auk, XXIV, No. 2, April, 1907, 135–148. (By B. H. Swales and P. A. Taverner.) Remarks on changes in abundance in various species, with observations on thirty-two forms.
64. The Birds of Point Pelee. Wilson Bull., XIX, No. 2, June, 1907, 37–53; No. 3, Sept., 1907, 82–99; No. 4, Dec., 1907, 133–153; XX, No. 2, June, 1908, 79–96; No. 3, Sept., 1908, 107–129, with map. (By P. A. Taverner and B. H. Swales.) Comment, often extended, on two hundred and nine species observed at this interesting station during the migratory period. The observations were made over a number of years, with the aid of several other students.
65. Winter Notes from Detroit, Michigan and Vicinity. Wilson Bull., XX, No. 3, Sept., 1908, 152–154. Notes on ten species of rare or unusual occurrence in winter.
66. *Bubo virginianus occidentalis* in Michigan. Auk, XXVII, No. 2, April, 1910, 208. Records a specimen from Ontonagon County.
67. Carolina Parakeet (*Conurus carolinensis*). Auk, XXVII, No. 2, April, 1910, 209. The supposed Michigan record for this species proves to be erroneous.
68. The Turnstone at Grosse Isle, Michigan. Auk, XXVII, No. 4, Oct., 1910, 452–453.
69. Hawk Owl (*Surnia ulula caparoch*) in Michigan. Auk, XXVII, No. 4, Oct., 1910, 454.
70. Nesting of *Passerherbulus henslowi henslowi* on Grosse Isle, Michigan. Auk, XXVII, No. 4, Oct., 1910, 458–459.

71. Notes from Grosse Isle, Michigan. Auk, XXVII, No. 4, Oct., 1910, 462. Notes on *Lophodytes cucullatus* and *Dendroica discolor.*
72. Notes on the Migration of the Saw-whet Owl. Auk, XXVIII, No. 3, July, 1911, 329–334. (By P. A. Taverner and B. H. Swales.) Migratory movements in this species verified.
73. Yellow Rail (*Coturnicops noveboracensis*) [in Michigan]. Auk, XXIX, No. 1, Jan., 1912, 100–101. Notes on its presence in Wayne County.
74. Duck Hawk (*Falco peregrinus anatum*) [in Michigan]. Auk, XXIX, No. 1, Jan., 1912, 102. Summer record for Wayne County.
75. Carolina Wren (*Thryothorus ludovicianus ludovicianus*) [in Michigan]. Auk, XXIX, No. 1, Jan., 1912, 107. Several records for southern Michigan are here cited.
76. Yellow Rail in Michigan. A Correction. Auk, XXIX. No. 2, April, 1912, 237–238. Correction of earlier note; the records relate to Wayne County.
77. Some Additions to a List of the Winter Birds of Southeastern Michigan. Part III. Wilson Bull., XXIV, No. 3, Sept., 1912, 126–129. Eighteen additions to the lists given under nos. 39 and 50.
78. Northern Phalarope (*Lobipes lobatus*) in Michigan. Auk, XXX, No. 1, Jan., 1913, 111–112. Records a bird from Lenawee County, apparently the first undoubted capture for the state.
79. A Critique of Barrows' 'Michigan Bird Life.' Wilson Bull., XXV, No. 1, March, 1913, 27–36. Comments on Barrows' work, with notes on thirteen species that should be eliminated from the Michigan list.
80. The Golden Plover (*Charadrius dominicus dominicus*) in Michigan in Spring. Auk, XXX, No. 4, Oct., 1913, 581. Record of several specimens secured in April.
81. The Ornithological Writings of Charles Fox. Occ. Papers Mus. Zool. Univ. of Mich., No. 26, April 15, 1916, 1–2. Fox's "The Birds of Michigan," the original place of publication of which had been a puzzle of long standing, is here cleared up.
82. Mockingbird (*Mimus polyglottos polyglottos*) in Wayne County, Michigan. Auk, XXXIII, No. 4, Oct., 1916, 437–438. Three records are cited for this locality.
83. Northern Phalarope (*Lobipes lobatus*) in Michigan. Auk, XXXV, No. 1, Jan., 1918, 75. Comments on a recent record made by Barrows.
84. The Purple Sandpiper at Cleveland, Ohio. Occ. Papers Mus. Zool. Univ. Mich., No. 57, June 20, 1918, 1–2.
85. Stilt Sandpiper (*Micropalama himantopus*) in Wyoming. Auk, XXXVI, No. 1, Jan., 1919, 102. Records four specimens from Fort Laramie.

86. A Former Record of the Heath Hen (*Tympanuchus cupido*) at Washington, D. C. Proc. Biol. Soc. Washington, 32, Dec. 31, 1919, 198. Based on a bird collected in April, 1846, and formerly in the National Museum collection.
87. Hooded Warbler (*Wilsonia citrina*) at Detroit, Michigan. Auk, XXXVII, No. 3, July, 1920, 463.
88. Records of Several Rare Birds from near Washington, D. C. Proc. Biol. Soc. Washington, 33, Dec. 30, 1920, 181–182. Records of seven species rare for the region.
89. Scissor-tailed Flycatcher (*Muscivora forficata*) in Northampton County, Va. Auk, XXXIX, No. 1, Jan., 1922, 109.
90. [Notice of Organization of Baird Club.] (Anon.) Auk, XXXIX, No. 3, July, 1922, 455.
91. Prairie Horned Lark (*Otocoris alpestris praticola*) in Maryland in Summer. Auk, XXXIX, No. 4, Oct., 1922, 568–569. Reports the breeding of this form near Laurel, Md.
92. *Vermivora leucobronchialis* in Venezuela. Auk, XL, No. 1, Jan., 1923, 132–133. Records a specimen of this hybrid collected in the Merida region on April 10, 1920.
93. [Notice of Annual Meeting of Baird Ornithological Club.] Auk, XL, No. 2, April, 1923, 381.
94. Descriptions of Three New Birds from Gonave Island, Haiti. Proc. Biol. Soc. Washington, 37, March 17, 1924, 105–107. (By Chas. W. Richmond and Bradshaw H. Swales.) New forms of the genera *Saurothera*, *Calyptophilus*, and *Phaenicophilus* are described.
95. [Notice of Annual Meeting of Baird Ornithological Club.] (Anon.) Auk, XLI, No. 3, July, 1924, 514.
96. *Vireo bellii bellii* at Detroit, Michigan. Auk, XLII, No. 3, July, 1925, 449–450. (By Bradshaw H. Swales and Norman A. Wood.) Doubt is thrown on a recent record of this species, based on a specimen alleged to have been collected near Detroit.
97. [Notice of Annual Meeting of Baird Ornithological Club.] Auk, XLII, No. 3, July, 1925, 482.
98. Ruby-throated Hummingbird near St. Michael, Alaska. Condor, XXVIII, No. 3, May 15, 1926, 128. An unusual record for this species.
99. Yellow-crowned Night Heron in Virginia. Auk, XLIII, No. 4, Oct., 1926, 538. Capture of a specimen at Boyce, Clarke Co., is reported.
100. *Idiopsar brachyurus* in Argentina. Auk, XLIII, No. 4, Oct., 1926, 547–548. First record for this rare bird in Argentina.
101. [Notice of Annual Meeting of Baird Ornithological Club.] Auk, XLIII, No. 4, Oct., 1926, 580.

U. S. National Museum.

THE FALL FOOD HABITS OF THE RUFFED GROUSE IN THE SYRACUSE AREA OF NEW YORK.

BY R. A. JOHNSON.

COMPREHENSIVE studies on the food habits of the Ruffed Grouse have apparently not been made. In the literature available, such accounts as I have found on this subject are merely brief notes on a small number of birds in a few individual cases. Under title of "Notes from Wisconsin," Wilson (Auk, Vol. 33, 1920, p. 14) says, "The crops of ten Ruffed Grouse taken in Chippewa County, November 25 to 28, 1915, were examined and seven found to contain largely the pods of the hog peanut vine (*Amphicarpa*). This vine was very plentiful in the region, trailing over the bushy growth in the burned area." Wilson says further, "The crops of two Grouse collected by Mr. Schorger in November, 1914, were full of catkins of hazel (*Corylus rostrata*). The birds were taken early in the morning."

In regard to the food of Grouse in the Syracuse area, my personal observations show that during the fall the food consists of a great variety of vegetable material as well as some animal matter. No doubt the bird is perfectly able and satisfied to adapt its tastes as required in habitats of great variation in the nature of the food supply. Even within the same locality certain alleged choice foods such as beech and oak mast may be entirely lacking for a period of years, yet the birds do not suffer appreciably.

In making a study of the fall food habits of the Grouse in the Syracuse area, twenty-six crops were examined in the laboratory and an analysis made of the food contents. These crops were collected from birds killed by hunters in different parts of this region, between October 15 and November 15, 1925.

Of the twenty-six crops examined, one was entirely empty. The vegetable material of these crops was identified by Dr. L. H. Pennington, of the Botany Department of the New York State College of Forestry. The animal content, which was almost negligible, was identified by the author. The results of these studies are tabulated below.

The percentages of different kinds of food in the crop contents were arrived at after sorting the material and basing estimates on a careful study of the quantity proportions. Due to the great variety in total crop contents for different birds and the relatively small number of foods found in individual crops, such a plan seemed to provide the most comprehensive record.

The "crop statistics" of eight of the birds which were representative of the kinds of food noted in the others are as follows:

Bird No. 3—Killed October 27, 1925, Constantia, N. Y.

Crop content:	Fruit of black alder (*Alnus vulgaris*)	30.0%
	Leaves, black alder (*Alnus vulgaris*)	1.0%
	Leaflet, royal fern	.5%
	Leaflet, wintergreen (*Pyrola* sp.)	.5%
	Beech drops (flowers and seeds in pods, fruits (*Epifagus virginiana*)	68.0%

Bird No. 6—Killed October 31, 1925

Crop content:	Catkins (*Alnus vulgaris*)	85%
	Leaves (*Alnus vulgaris*)	15%

Bird No. 11—Killed November 8, 1925, Cleveland, N. Y.

Crop content:	Nanny berries (532) (*Viburnum lentago*)	98%
	Leaves, partridge-berry (*Mitchella repens*)	2%

Bird No. 14—Killed November 4, 1925, Constantia, N. Y.

Crop content:	Leaf, sheep sorrel (*Rumex acetosella*)	100%

Bird No. 15—Killed November 6, 1925, Constantia, N. Y.

Crop content:	Leaves, false miterwort (*Tiarella cordifolia*)	100%

Bird No. 25—Killed November 14, 1925.

Crop content:	Fruit, hog peanut (*Amphicarpa* sp.)	30%
	Leaves, false miterwort (*Tiarella cordifolia*)	10%
	Squirrel corn (?)	60%

Bird No. 5—Killed October 27, 1925, Constantia, N. Y.

Crop content:	Nanny berries (*Viburnum lentago*)	45%
	Fruit (*Geum flavum*)	3%
	Wintergreen berries (*Pyrola* sp.)	2%
	Alder leaves	25%
	Leaves, sheep sorrel (*Rumex acetosella*)	6%
	Leaves, birch	15%
	Spiders	3%
	Fly	
	Catkin of birch	1%

Bird No. 28—Killed November 14, 1925, Onondaga Co., N. Y.

Crop content: Nanny berries (*Viburnum lentago*)..... 80%
Leaves, sheep sorrel (*Rumex acetosella*)..... 15%
Berries, wintergreen (*Pyrola*)..... 5%

RELATIVE IMPORTANCE OF FOODS AS SHOWN BY ANALYSIS OF 25 CROPS OF THE RUFFED GROUSE.

20% of all birds ate an average of 32% birch leaves
36% " " " " " " " 11.11% Alnus leaves
18% " " " " " " " 4.25% partridge berry leaves
36% " " " " " " " 64.66% nanny berries
36% " " " " " " " 43.6% sheep sorrel
24% " " " " " " " 24.33% Alnus catkins
20% " " " " " " " 3.6% thorn apple
12% " " " " " " " 70% false miterwort
16% " " " " " " " 27.75% beech buds
16% " " " " " " " 8% birch buds
16% " " " " " " " 26% clover leaves

ADDITIONAL OBSERVATIONS ON FOOD MATERIAL.

The gizzards of several birds were found to contain cherry stones and seeds of thorn apple where such food was not present in the bird's crop—probably due to the fact that the season for these foods was almost gone when the birds were taken.

On November 11 one bird was observed feeding on wild grapes, a food not recorded among the contents of any crop examined.

The leading varieties of food in order of their importance as shown by this analysis were:

1 Nanny berries (*Viburnum lentago*)
2. Sheep sorrel (*Rumex acetosella*)
3. Alnus catkins and leaves
4. Birch leaves
5. Beech buds
6. False miterwort (*Tiarella cordifolia*)
7. Clover leaves
8. Partridge berry leaves
9. Birch buds
10. Thorn apple

The amount of food content found in different crops varied greatly. In general the crops with the greatest content showed a very high percentage of one variety of food. Crops Nos. 12, 40, and 28 showed 80% of this food. Crop No. 3 was a very large crop and 68% of its contents consisted of beech drops, some of the pieces being from two to three inches long.

CHARACTER OF FOOD.

Of the twenty-six crops examined only three were found to contain any animal matter, and two of these contained less than 10% insect material. In physical character, the food as swallowed was coarse. Leaves were swallowed whole or in parts and catkins were often taken in clusters of three. Fruiting clusters of many berries were taken intact and legumes or pods were swallowed whole.

HABITS IN FEEDING.

During the fall season the natural feeding habits of the Grouse are perhaps considerably affected by the open hunting season, the birds at this time being extremely wary. However, the fall offers the most bountiful supply of food which can be easily reached from a place of concealment at an opportune time during the day. Hunters have learned that Grouse usually collect where choice foods are plentiful. Thus a patch of nanny berries or thorn apples means a likely place to find good shooting.

Syracuse, N. Y.

TAKING BODY WEIGHTS OF BIRDS[1]

BY EVERETT C. MYERS.

OUR feathered folk have stayed the attention of observers in practically every part of the world. Indeed, they have inspired and called forth a ponderous literature, some of which dates back to very early times. Yet, it seems extremely surprising to find, when one examines any considerable portion of the more accessible publications, that there is very little available data concerning the body weights of even our commonest birds.

Such matters as classification, anatomy, economic importance, life history and many others may be readily found, often discussed at great length, but if a search is directed toward a discovery of the average weight of a Bluebird or of a Robin, it is likely to prove both discouraging and practically fruitless. Why is this?

Perhaps the popular interest in birds may not be particularly attracted to the fact that a House Wren weighs not more than four- to five-tenths of an ounce or that the robust English Sparrow weighs on the average only a trifle over one ounce. Be that as it may, ornithologists are embarrassingly confronted with the pertinent fact that there exists a big gap in our sum total of information about birds which needs filling in with exact knowledge. In fact, a large amount of detailed data bearing upon this subject must come forth before many of our more obscure ornithological problems can be solved.

Andrews[2] says, ". . . the weight of the song bird is not a feature recorded by the ornithologist to any extent. To find the weight of a Cardinal Bird we must either shoot one or look for information in unusual publications. . . ."

To date, with the exception of a few scattered references of minor importance, only four publications[2], [3], [4], [5] dealing with wild

[1] Portions read before the Indiana Academy of Science December 3, 1926, under title "Weights of Banded Birds."

[2] Andrews, E. A.—Usefulness of Our Song Birds Through Soil and Vegetation. Auk, Vol. XLIII, No. 4, Oct. 1926.

[3] Heinroth, O.—Die Beziehungen zwischen Vogelgewicht, Eigewicht, Gelegengewicht und Brutdauer. Ornithologische Monatsberichte, Bd. 32, 1915.

[4] Krohn, H.—Vogelgewichte. Ornithologische Monatsberichte, Bd. 32, 1915.

[5] Whittle, C. L. & H. G.—Some Bird Weights. Bull. Northeastern Bird-Banding Assoc. Vol. II, No. 2, April, 1926.

bird weights have come to my attention. It is not intended to imply by this, however, that I have an exhaustive acquaintance with bird literature. Two of the articles referred to are published by German authors and are quite inaccessible to the average American bird student.

There is no doubt in the author's mind that there is a genuine need for accurate, systematic measurements of the body weights of all our wild birds. An example will perhaps be sufficient to illustrate the point in question.

Whittle[1] says, "About April 7, several Song Sparrows appeared, four of which were large rangy birds averaging 2.90 grams heavier than the average weight of the first group.—Apart from the interest these birds have as constituting a possible migratory unit, there remains the interest due to their apparent greater weight than the average of the eastern Song Sparrows. . . At Mrs. Whittle's banding station in Peterboro, N. H., for two successive years in October a few of this type of Song Sparrow have appeared in her traps and have been banded, and her notes describe them as 'large rangy birds.' We have even come to think of them as constituting a possible example of a northern race of the Eastern Song Sparrow, which has never been obtained on its breeding grounds and which at present is represented by the abnormally large birds in our museums, birds collected perhaps only as migrants."

An incident from the author's bird banding experiences has a direct bearing upon the above citation and is given here to illustrate further the need for data concerning bird weights.

At 8:45 a.m. on February 18, 1926, two exceptionally heavy Song Sparrows were taken from the same trap and carried into the laboratory to be banded and weighed. During a bit of excitement the door of the gathering cage was accidently pulled open. Before it could be closed both birds escaped and were instantly killed by flying forcibly against the window.

In my four years previous banding experience, Song Sparrows had been caught and banded during the winter months which were notably larger and heavier than those caught at other times,

[1] Whittle, C. L.—On the Nature of the Relationship Existing Among Land Birds During Sustained Aerial Migration. Auk, Vol. XLIII, No. 4, Oct. 1926.

though up to this time no attempt had been made to weigh or measure the larger birds.

It was decided to take advantage of the above situation in order to determine whether the excessive weight might not be due to fat or perhaps to a very early development of the sex organs. Both birds were accordingly dissected only to find that the sex organs were exceedingly small—so small, in fact, that the bird of lighter weight was not determined to be a female until after microscopical examination of frozen sections revealed the presence of very small oöcytes (eggs).

Removal of the contents of the crops showed that each bird contained less than one-fourth of a gram of food material although the average crop-capacity was subsequently estimated to be between three and four grams. There appeared to be no sign of fat in either bird.

The length of the male was 6.8 inches: that of the female 6.7 inches, about one half an inch longer than the average Eastern Song Sparrow. Both Song Sparrows were of course weighed immediately following the accident. It was found that the male weighed 26.5 grams: the female 26.0 grams. Subsequent weights of 39 other Song Sparrows yielded an average of 22.5 grams per bird. As for plumage, I was unable to detect any difference from that found in the average Eastern Song Sparrow.

While the above data are by no means conclusive, it is certainly suggested that there is perhaps a larger, more robust race of Eastern Song Sparrow, found during the breeding season only at the northern limit of the Song Sparrow range.

Whittle was the first to call attention to these larger, heavier Song Sparrows as determined by taking their weights. He was also first to suggest the possibility of a northern race of the Eastern Song Sparrow. It is interesting that both Whittle and I have arrived at this hypothesis by the weighing method. The above dissections lend additional weight to the hypothesis.

The point is clear, I take it, that there is an actual need for accurate information concerning the weights of wild birds, and, the primary purpose of this paper is to demonstrate to bird banders that it is quite practical for them to contribute valuable data on bird weights, at very small cost for new equipment, or additional expenditure of time.

The first difficulty encountered by the author in weighing birds was the securing of a suitable, accurate scale at small cost. After consideration of many scales a Dietetic Spring Balance[1] was decided upon, first, because no time-consuming manipulation of weights is required, and second, because the cost is not great. The scale used had a capacity of 250.0 grams and was determined to be accurate to about 0.5 of a gram. Since a fat Bob-White weighs only about 190 grams, it is apparent that the capacity is ample for the needs of the average bird bander.[2] Scales of the same kind, but of greater capacity may be secured from the same maker.

The Dietetic Spring Balance has the advantage of a movable dial, by means of which the tare-weight of the bird container may be neutralized, and the weight of the bird read off directly without subtraction.

A number of box-like containers to hold the bird while being weighed were experimented with, but after a number of trials and estimates of the time required, a simple cloth sack was finally used exclusively. This sack had a length of about twelve inches, and an opening with diameter of about six inches. The material of the sack was of soft Canton flannel, of moderately heavy weight, though a great variety of materials might serve equally well.

To weigh a bird, the cloth sack was placed on the scale and the movable dial turned clockwise until it registered zero with the pointer. After banding, the bird was quickly inserted into the sack and held in the closed end while the opposite hand grasped it from the outside. The free end of the sack was then wrapped snugly about the bird so that the wings were securely pinned against its sides in a natural position. Thus folded within the bag, the bird was simply laid upon the pan of the scale and the weight read off directly. The sack requires no drawstring because experience shows that even the most nervous birds remain perfectly motionless while being weighed if they are properly wrapped within the cloth bag.

Injury by this procedure is unlikely in the hands of one at all experienced in handling live birds. That birds are unduly fright-

[1] This scale may be secured by parcel post from John Chatillon & Sons, New York City, at an approximate cost of $10.00.

[2] One ounce = 28.3495 grams.

ened is improbable because my repeat records show that numbers of individuals have submitted to being weighed by this method three or more times a day for a number of days in succession. Lastly it should be added—there is no danger of smothering because the entire procedure requires not more than twenty seconds.

In a subsequent paper the author expects to publish the weights of 252 birds, comprising 25 species, banded at Johns Hopkins University, Baltimore, Maryland, and to outline some of the problems that these data suggest.

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A METHOD TO DETERMINE THE WEIGHT OF FOOD DIGESTED DAILY BY BIRDS.

BY WILLIAM BREWSTER TABER, JR.

WHEN devising a method of taking physiological measurements of wild birds care must be taken to alter the environment as little as possible, for a change may upset the functioning of the various organs to such an extent that the measurements taken would be valueless. If, in order to measure the weight of food daily digested, wild birds were confined for considerable periods, the environment would be so radically different from the natural it is probable that it would materially effect the amount of food eaten. Restriction of activity would decrease the appetite, while fear and uneasiness caused by the unaccustomed surroundings would also have their effects. To avoid these undesirable factors the following procedure was devised.

The method consists in trapping birds of diurnal feeding habits in the late afternoon, weighing them, keeping them over night (the period of rest) and weighing them again in the morning. From the data thus obtained the daily (24 hour) rate of loss of weight may be calculated. As this loss must be balanced by the total amount of food (dry matter and water) digested, the daily loss of weight must be equivalent to the daily food consumption. Birds of nocturnal feeding habits are caught early in the morning and kept throughout the day, similar measurements being taken at the beginning and ending of their captivity. With this procedure the bird examined is placed in unnatural conditions and subjected to measurement *only after* its usual period of activity and feeding under normal unrestrained conditions; and if it is confined in a dark quiet place, disturbance of the usual digestive processes is reduced to a minimum.

This method is based upon two assumptions, first, that the bird examined is not appreciably changing in weight from day to day; second, that the hourly loss in weight during the period of rest fairly represents the rate at which body wastes are excreted during the entire 24 hours. There is no doubt that in the case of healthy

birds the first assumption introduces no error. The second assumption, however, is not strictly true. The excrement from the alimentary canal is probably somewhat greater during the period of activity than during the period of rest because the digestive and excretory functions are stimulated by exercise. The loss of carbon and moisture by way of the breath is considerably greater during the period of activity because exercise causes an immediate increase in body temperature which is controlled by the conduction of heat through the walls of the lungs and air sacks to the breath, and frequently a marked increase of body temperature is accompanied by a marked increase in the rate of respiration. Loss of weight due to wear of feathers and the sloughing of dead skin, etc., is insignificant. Loss of weight due to feeding activities of external parasites such as lice, parasitic flies, etc., is with healthy birds also insignificant. Therefore it seems, taking all of these factors into consideration, that the rate of losing weight during the period of rest is somewhat less than the rate for the entire 24 hours. This should be borne in mind while interpreting the following figures.

FOOD CONSUMPTION IN PERCENT OF ORIGINAL WEIGHT.

Species	Number Examined	Maximum	Minimum	Average
Mourning Dove	22	24.1	7.8	16.1
Screech Owl	1	——	——	19.1
Northern Flicker	1	——	——	14.6
Blue Jay	1	——	——	16.2
Bronzed Grackle	1	——	——	11.6
English Sparrow	1	——	——	11.9
Vesper Sparrow	1	——	——	19.4
Grasshopper Sparrow	1	——	——	23.4
White-crowned Sparrow	1	——	——	13.1
White-throated Sparrow	5	20.9	9.4	15.8
Slate-colored Junco	5	16.6	9.8	13.5
Towhee	1	——	——	15.1
Tennessee Warbler	1	——	——	16.4
Brown Thrasher	3	12.0	10.3	11.2
Hermit Thrush	1	——	——	14.7
		Average of 46 birds		15.4

From these figures it is evident that the daily food consumption of wild birds averages approximately 15 or 16 percent of their weight. This is true regardless of the size of the species. The little Tennessee Warbler digested only 1.73 grams of food per day while a Mourning Dove consumed 19.4 grams, but in both cases this amounted to a little over 16% of their weights.

There is a large variation among individuals of a species. For instance 22 Mourning Doves varied between the limits of 7.8% and 24.1% of their weights.

It seems probable that there is a seasonal variation, because the daily food consumption of 13 Mourning Doves trapped from April 2 to August 1 averaged 11.7% of their weights, while the daily food consumption of 9 trapped from September 6 to October 6 averaged 20.4%. Such a large difference even with such a small number of birds is significant.

It is admitted that the data offered are incomplete, but it is hoped that various investigators will use this method for making determinations upon a great number of individuals of a wide range of species. Developments which might arise are, the precise determination of the general average based upon a large number of birds, the possible discovery of species varying considerably in food consumption from the general average, the determination of the limits if variation of individuals of a species from day to day and from each other, the determination of the magnitude of seasonal variation if any, and the possible linking of seasonal variation with profound physiological changes such as the moulting of feathers.

Kansas, Illinois.

THE RACES OF AMAZONA LEUCOCEPHALA (LINN.).

BY JAMES L. PETERS.

I have lately made a critical examination of the fine series of *Amazona leucocephala* in the collection of the Museum of Comparative Zoölogy and am prompted to publish my results as being of interest to students of the ornithology of the West Indies.

AMAZONA LEUCOCEPHALA LEUCOCEPHALA (Linn.).

Psittacus leucocephalus Linn. Syst. Nat. ed. 10, *1*, 1758, p. 100. ("Habitat in America" ex Edwards Natural Hist. Bds. p. 166, pl. 166 = Cuba).
Psittacus paradisi Linn. Syst. Nat. ed 10, *1*, 1758, p. 101. ("Habitat in America," ex Catesby Nat. Hist. Carolina *1*, p. 10, pl. 10, Cuba.)
Amazona leucocephala palmarum Todd. Ann. Carn. Mus. *10*. 1916, p. 228 (Los Indios, Isle of Pines).

Description: General color green becoming yellowish on the undertail coverts and bluish on the occiput, green feathers of the upper parts and of the breast with dusky edgings; forehead and anterior portion of crown white; throat and cheeks rose pink; a purplish-red patch on the abdomen. Primaries and secondaries blue or bluish on the outer webs, dusky on the inner; central pair of rectrices green, rest (except outermost) green on the outer webs, red on the basal half of the inner web, terminal half of the inner web yellow or yellowish green; outer pair of rectrices similar but with the outer webs blue.

I am unable to find any constant characters by which Parrots from the Isle of Pines may be distinguished from Cuban examples. The characters claimed by the original describer of *palmarum* are: general color darker green; abdominal patch averaging darker and more extensive, and the throat somewhat deeper red. Ridgway gives:—"size slightly larger, red of throat, cheeks, etc., deeper and somewhat more extended posteriorly, and abdominal patch also deeper and more extensive."

Barbour (Mem. Nutt. Orn. Cl. No. VI, 1923, p. 82) states that specimens from eastern and central Cuba are identical with specimens from the Isle of Pines and restricts the name *leucocephala* to eastern Cuba.

With a series of over thirty skins from nearly all parts of Cuba

and the Isle of Pines I am convinced that the characters enumerated are of no diagnostic value, but rest entirely on age or freshness of plumage, or both; neither can I verify any differences based on size, and unhesitatingly synonymize *A. l. palmarum* with *A. l. leucocephala.*

AMAZONA LEUCOCEPHALA CAYMANENSIS (Cory).

Chrysotis caymanensis Cory, Auk, *3*, Oct. 1886, p. 497, p. 502. (Grand Cayman).

Subspecific characters:—Similar to *A. l. leucocephala* but averaging slightly larger; more yellowish green; dusky edging of the contour feathers less pronounced; green on the sides of the neck extended so as to separate the rose color of the throat from that of the cheeks; white forehead less extensive; red abdominal patch much reduced.

Range.—Grand Cayman.

AMAZONA LEUCOCEPHALA HESTERNA Bangs.

Amazona leucocephala hesterna Bangs. Bull. M.C.Z. *60*, No. 7. Mar. 1916, p. 308. (Cayman Brac.)

Subspecific characters:—Similar to *A. l. leucocephala* but much smaller, more yellowish green; abdominal patch more extensive and more purplish red; throat and cheeks deeper red.

While the closest geographical representative of this well-marked race is found on Grand Cayman, *hesterna* more nearly resembles *leucocephala* of Cuba. There is, however, a tendency for green on the sides of the neck to encroach upon the throat as in *caymanensis*, but the amount is inconstant, and is not even symmetrical in the same individual.

Range.—Little Cayman and Cayman Brac.

AMAZONA LEUCOCEPHALA BAHAMENSIS (Bryant).

Psittacus collarius var. *bahamensis* Bryant, Proc. B.S.N.H. *11*, Apr. 1867, p. 65. (Fortune, Acklin and Inagua Ids. Bahamas.)

?Psittacus gutturalis Müller, Nat. Syst. Suppl. 1776, p. 79 (Martinique, ex. Pl. enlum. pl. 549).

Subspecific characters:—Similar to *A. l. leucocephala*, but larger, the white crown more extended posteriorly; rosy throat patch more extensive; red abdominal area more restricted; red basal portion of the rectrices more restricted.

"Perroquet de la Martinique," Plate 549 of Daubentons Planches Enluminées, the basis of P. L. S. Müller's *Psittacus gutturalis*

may possibly represent the Bahaman race of *Amazona leucocephala* with the extended white crown and rosy throat and restricted abdominal patch. The amount of red in the tail of the figure is, however, characteristic of Cuban examples; besides, the chances are against Daubenton's having figured a specimen from the Bahamas, and for these reasons it is better not to make any change in the name of the Bahaman Parrot.

Amazona collaria (Linn.) of Jamaica and *A. ventralis* (Müll.) of Haiti are both doubtless of the same common ancestry as *leucocephala*, but have reached a point in their evolution where they are best regarded as specifically distinct. For instance, *collaria* has only a faint indication of dusky tips to the contour feathers and the white on the head is restricted to a frontal band, the abdominal patch has disappeared though the rosy throat persists; the auriculars are greenish or bluish instead of black.

Ventralis shows less of a departure, the most noticeable feature being the loss of the red throat while the red abdominal patch is retained.

Museum of Comparative Zoology,
Cambridge, Mass.

LONGEVITY OF BIRDS IN CAPTIVITY.

BY C. EMERSON BROWN.

BUT little is known of the length of life of birds. Bird banders are doing some valuable work along these lines, but even their data must necessarily be very incomplete. It is difficult to state how much longer a bird will live in the wild than in captivity. In the wild state very little is known of the duration of life. It is, however, extremely doubtful if any birds live long enough to die of old age, as their lives are traveled on a road beset with dangers, and eternal vigilance and hard work are the price of living. Thousands of birds meet violent deaths yearly either by being killed by other birds, mammals or reptiles, flying against buildings or wires during their migration, or are shot by hunters. Besides this, many perish because of the vicissitudes of the weather and lack of food. They certainly have many advantages in captivity, the greatest of which is the protection from their enemies. There is never a scarcity of food or drink and they are protected from severe weather at all times. It is also a fact that some specimens in captivity do die of diseases of the heart, blood and kidneys which are diseases so common in human old age.

It is, however, difficult to say whether the length of life is shortened by captivity or not. I have, prepared the following list showing the duration of life of a few species in captivity in the Philadelphia Zoological Garden, which I hope will be of interest.

Among the Passerine birds the Yellow-headed Blackbird heads the list with 18 years, the Jungle Babbler, 16 and the Himalayan Chough, 14. The Hyacinth Macaw lived 27 years and a Hornbill 24. Among birds of prey the Griffon Vulture lived 27 years, while a Gray Goose led the water birds with 26 years.

AVES.

PASSERES.

Name	*Received*	*Died*
European Raven (*Corvus corax*)	July 19, 1912	July 29, 1924
Jackdaw (*Corvus monedula*)	Oct. 10, 1913	Mar. 20, 1922
American Magpie (*Pica hudsonica*)	Sept. 18, 1917	Sept. 24, 1924

European Jay (*Garrulus glandarius*)	Mar. 4, 1919	Jan. 2, 1925
Himalayan Chough (*Pyrrhocorax graculus himalayanus*)	May 19, 1909	Jan. 23, 1923
Common Starling (*Sturnus vulgaris*)	Jan. 3, 1918	Mar. 24, 1924
Australian Starling (*Calornis metallica*)	July 19, 1917	Aug. 26, 1924
Pied Mynah *Sturnopastor contra*)	April 9, 1914	July 28, 1924
Silky Cowbird (*Molothrus bonariensis*)	Mar. 29, 1918	April 30, 1924
Colombian Grackle (*Quiscalus assimilis*)	Dec. 27, 1916	May 18, 1924
Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)	Oct. 4, 1910	Oct. 24, 1926
Bishop Weaver *Pyromelana franciscana*)	Sept. 29, 1913	May 11, 1923
African Silverbill (*Aidemosyne cantans*)	May 18, 1914	Jan. 23, 1922
Spotted Munia Finch (*Munia punctulata*)	Oct. 10, 1916	Mar. 25, 1924
Java Sparrow (*Munia oryzivora*)	Nov. 13, 1919	Jan. 12, 1925
Yellow-bellied Finch (*Sporaeginthus flaviventris*)	Sept. 3, 1919	Sept. 5, 1924
Masked Finch (*Lagonosticta larvata*)	May 28, 1918	Sept. 5, 1924
Gouldian Grass Finch (*Poephila gouldiae*)	Nov. 10, 1914	April 8, 1924
Guttural Finch (*Spermophila gutturalis*)	June 20, 1916	May 21, 1924
Indian Gray Shrike (*Lanius lahorta*)	May 14, 1914	Nov. 4, 1922
Jungle Babbler (*Crateropus canorus*)	April 19, 1908	Nov. 15, 1924
Madras Red-vented Bulbul (*Pycnonotus haemorrhous*)	Oct. 29, 1914	Mar. 31, 1923
Red-eared Bulbul (*Pycnonotus jocosus*)	May 28, 1918	Mar. 19, 1924
PICARIAE.		
Green-billed Toucan (*Rhamphastos dicolorus*)	Aug. 9, 1912	Mar. 23, 1923
Concave-casqued Hornbill (*Dichoceros bicornis*)	May 11, 1904	.....
Gray Touracou (*Schizorhis concolor*)	June 20, 1914	Jan. 11, 1924
PSITTACI.		
Swainson's Lorikeet (*Trichoglossus novaehollandiae*)	Oct. 31, 1908	Mar. 26, 1923
Roseate Cockatoo (*Cacatua roseicapilla*)	May 4, 1911	Mar. 16, 1922
Sulphur-crested Cockatoo (*Cacatua galerita*)	June 5, 1912 Mar. 17, 1918	June 2, 1924 June 18, 1924
Crested Ground Parrakeet (*Calopsitta novae-hollandiae*)	Feb. 20, 1912	April 19, 1923
Hyacinthine Macaw (*Ara hyacinthina*)	July 22, 1893	Feb. 28, 1920
Mexican Conure (*Conurus holochlorus*)	Mar. 19, 1902	Oct. 2, 1924
White-eared Conure (*Conurus leucotis*)	Oct. 23, 1917	April 3, 1924
Red-vented Parrot (*Pionus menstruus*)	Nov. 15, 1918	Sept. 15, 1924
Green-thighed Caica (*Caica leucogaster*)	Nov. 25, 1919	July 26, 1924

Yellow-thighed Caica (*Caica xanthomera*)	Nov. 22, 1914	July 30, 1924
Blossom-headed Parrakeet (*Palaeornis cyanocephalus*)	Jan. 4, 1905	Oct. 10, 1923

ACCIPITRES.

Lesser-Spotted Eagle (*Aquila pomarina*)	May 22, 1898	Oct. 1, 1920
	May 22, 1898	Aug. 10, 1917
Malayan Brahminy Kite (*Haliastur intermedius*)	Oct. 17, 1907	Dec. 7, 1922
White-headed Carrion Hawk (*Ibycter chimachima*)	May 1, 1918	May 22, 1924
Griffon Vulture (*Gyps fulvus*)	Nov. 26, 1901	.....
Kolbs Vulture (*Gyps kolbi*)	May 12, 1908	.....
	May 12, 1908	.....
Bearded Vulture (*Gypaetus barbatus*)	Aug. 27, 1898	Mar. 16, 1916

GALLI.

Jungle Fowl (*Gallus gallus*)	April 2, 1912	May 21, 1924
Eastern Wild Turkey (*Meleagris gallopavo silvestris*)	May 29, 1919	Dec. 21, 1924
Razor-billed Curassow (*Mitu mitu*)	Nov. 22, 1914	July 2, 1922

ALECTORIDES.

Asiatic White Crane (*Grus leucogeranos*)	Aug. 23, 1904	.....

GAVIÆ.

Herring Gull (*Larus argentatus*)	June 1, 1917	July 3, 1924

STEGANOPODES.

Double-crested Cormorant (*Phalacrocorax auritus*)	Oct. 24, 1909	July 13, 1922

HERODIONES.

American Egret (*Ardea egretta*)	Jan. 5, 1917	June 30, 1924

ANSERES.

Mute Swan (*Cygnus olor*)	Aug. 7, 1909	.....
	Oct. 10, 1912	.....
Black Swan (*Cygnus atratus*)	April 18, 1907	May 25, 1916
	June 26, 1912	July 2, 1924
Whooper Swan (*Cygnus cygnus*)	Oct. 30, 1907	Mar. 1, 1923
	May 7, 1915	.....
Whistling Swan (*Cygnus columbianus*)	Mar. 16, 1898	Jan. 24, 1906
	Mar. 16, 1904	Aug. 17, 1913

Trumpeter Swan (*Cygnus buccinator*)	Dec. 11, 1895	Feb. 27, 1908
	Dec. 11, 1895	.....
Egyptian Goose (*Chenalopex aegyptiaca*)	May 3, 1896	Nov. 24, 1921
Black & White Goose (*Anseranas semipalmata*)	July 19, 1917	Nov. 5, 1924
White-fronted Goose (*Anser albifrons gambeli*)	May 20, 1910	Jan. 5, 1922
Gray Goose (*Anser anser*)	May 22, 1898	Jan. 29, 1924
Blue Goose (*Chen caerulescens*)	May 12, 1911	Jan. 16, 1922
Cackling Goose (*Branta canadensis minima*)	May 25, 1915	Mar. 19, 1924
Ruddy Shieldrake (*Casarca casarca*)	June 12, 1913	Nov. 23, 1923
Gadwall (*Chaulelasmus streperus*)	Jan. 22, 1908	Mar. 25. 1924
Pochard (*Fuligula ferina*)	July 30, 1917	Oct. 12, 1924
Red-head Duck (*Marila americana*)	Feb. 8, 1908	Nov. 2, 1924
	Jan. 22, 1908	Oct. 24, 1922
Mandarin Duck (*Aix galericulata*)	April 28, 1916	Dec. 14, 1924
STRUTHIONES.		
Somali Ostrich (*Struthio molybdophanes*)	April 20, 1909	Dec. 7, 1923

Where the date is omitted in the second column the bird is still living, while it is practically certain that all birds were at least two years old when received.

Zoological Gardens, Philadelphia.

SOME NOTES ON THE BIRDS OF THE BRANCHPORT, N. Y. REGION IN 1926.

BY VERDI BURTCH.

Cygnus columbianus. WHISTLING SWAN.—In the morning of April 4, 1926 I saw five Whistling Swans in Lake Keuka by the mouth of the inlet at Branchport. Here they spent the entire day in the shallow water around the inlet and by the sand bar. Twenty-one Canada Geese came in about noon and at 1 P. M. were still resting with heads under their wings and the Swans were swimming along side of them. Later the Geese came over into the harbor (inside the bar) and came out on the ice and the Swans came in along the ice but did not get out onto it The Swans left the lake just as it was getting dark, flying west over the hills and the Geese left shortly after seven o'clock next morning.

Somateria spectabilis. KING EIDER.—Sunday April 25 was cloudy and misty in the morning, with a cold south wind and thermometer at 50 Fahr. At the lake I found a small flock of American Scaup Ducks resting near shore and among them was a larger, buffy-brown colored Duck, that, when it raised its head made me think "Eider." After giving it close study through 8-power binoculars I went home and consulted my books and was then certain that it was a female Eider, but both Eaton and Forbush say that as a rule the females of the King and the American Eider cannot be distinguished one from the other in the field. At 1 P. M. there were 16 American Scaups (8 pairs), a pair of Buffleheads, 2 male Baldpates, a male European Widgeon and the Eider resting on the water close in shore and in the lee of a clump of cat-tails. I was by an old boat house within about four rods of them and had them under observation for more than an hour. The Eider was noticeably larger that the other Ducks, kept her head under her wing most of the time, just paddling enough to keep from drifting away from the shelter of the cat-tails. Her color was a deep buff or tan-brown, the back barred with black, cheeks and a line on the sides of neck a little lighter. I could plainly see the feathering on the sides of bill when she raised her head. Once she roused up, uttered a soft cooing note, stretched up and flapped her wings, when I saw the secondaries and they appeared to be grayish. I gave it much study and at the time was satisfied that it was a female King Eider. The next morning it and the Baldpates and Widgeon had gone.

I attended the A. O. U. meeting at Ottawa October, 1926 and while there saw the mounted specimens of the females of both King and American Eiders and now am certain that the Eider I saw was a female King Eider.

Phloeotomus pileatus abieticola. NORTHERN PILEATED WOODPECKER.—May 9, Mr. W. A. Tuttle and I were walking up Flint Creek in Potter Swamp, Yates Co., N. Y. when a Pileated Woodpecker came flying

down the creek and passed directly over our heads and then on down the creek and out of sight. We followed but could not locate it again. This was the first Pileated Woodpecker ever recorded here though Dr. Eaton says that he heard one in this same swamp last year.

Gallinago delicata. WILSON'S SNIPE.—At 6 P. M. May 16, we had come out into the road that crosses Potter Swamp and were resting and talking over our afternoon with the birds in the swamp when we kept hearing a peculiar sound that reminded me of the call of a hen turkey, *querk querk querk querk*, and repeated many times but we were unable to locate it. I had seen a bird perched on the top of a large dead stub about 30 feet from the ground and some 100 rods down the edge of the swamp that I took to be a Grackle. I had just trained my glass on it when it flew up, hovered a few seconds then dropped into the grasses in the swamp and I was surprised to see that it was a Wilson's Snipe. Then the sound ceased.

After I arrived home I went down to the marsh to set my bird traps. The twilight was just beginning and here I heard this same, *querk querk querk querk*, quite near by and then saw a Wilson's Snipe out on the mud in plain sight and not more than two rods from me. Using my binoculars I could plainly see its bill move in time with the song or call. I stood and watched it and the song or call was repeated over and over until I moved forwards when he (?) flew a couple of rods and lit in a patch of burned cat-tails and kept right on repeating, *querk querk querk querk, querk querk querk querk.*

Perhaps this is a common performance in the nesting season but I can find in only two works on birds, what might be reference to this trait. Nelson in his 'Report on Natural History Collections Made in Alaska' page 100 writes "The first of June 1879 while at the Yukon mouth, several of these birds were heard uttering a loud peculiar note, which may be represented by the syllables yak, yak, yak, yak in quick energetic explosive syllables. This note was uttered singly or repeated several times and appears to be a kind of call-note of the male during the breeding season. At the time the bird utters its note it flies along within a short distance of the ground with a peculiar jerky movement of the body and wings as every note is uttered."

This does not agree with the performance of my birds as one was standing quietly on the top of a stub 30 feet from the ground and the other one was standing still in one place on the ground.

This description of Dawson's in his 'Birds of California,' page 1218, seems more like it: "As we cast about for a possible camping site, my attention is arrested by a solicitous bird who is 'yelping' from the ground. The notes are dissyllables, pe chep' pe chep' pe chep' endlessly iterative, and uttered earnestly for minutes at a time. I can see the bird's mandibles playing rythmically and he sways his head slowly from side to side as he pipes."

The note uttered by my bird was a single syllable ("querk") uttered in series of fours and repeated again and again for minutes at a time and although I could see "the birds mandibles playing rythmically" he did not sway his head.

Podilymbus podiceps. PIED-BILLED GREBE.—May 30, way out in the marsh in water well above my knees and in the thin cat-tails I surprised a Pied-billed Grebe at her nest. She left in such a hurry that I saw only a splash in the water, and then the nest. There were pieces of egg shell in and around the nest and one egg, that was partly covered and warm. The Grebe kept well hidden from me and uttered, a *yap yup*, like the bark of a puppy. Keeping very still and watching intently through the cat-tails I soon saw her moving stealthily around and a downy, striped-faced young one was trying to climb on her back. She kept up the barking almost continuously while I was in the near vicinity of the nest.

A series of splashes around and near me, I thought at first to be made by the male Grebe and that he was trying to divert my attention and lead me from the nest but I soon saw that the splashes were made by carp of which there are many in these waters. I saw only the one young Grebe and I have wondered if the carp would pick them up. The young ones must keep to the cat-tails while they are in the downy stage as I did not see them in the open water until about August first. After August fourth I saw a pair of Pied-billed Grebes with three half-grown young in the water weeds in the shallow water nearly every day through August and September.

Uria lomvia lomvia. BRÜNNICH'S MURRE.—Dec. 13 a trapper told me of finding a strange bird (dead) on the edge of the shore ice on the marsh. I went down and found an adult Brünnich's Murre in fine plumage. Crows or Gulls had pecked a small hole in the left flank, from which some of the entrals had been removed. The Murre was almost black above and pure white below, legs and feet sooty flesh color above and sooty below, inside of mouth light yellow. In none of my books, do I find given the color of legs and feet and of the inside of the mouth. This specimen is now in the collection of Dr. E. H. Eaton at Hobart College, Geneva, N. Y.

Branchport, N. Y.

THE TURKEY VULTURE'S EYES.

BY ALEXANDER H. LEIGHTON.

To the best of my knowledge no experiments, since the days of Audubon, have been made on the American Turkey Vulture to determine whether he sees or smells his food. Dr. Witmer Stone suggested to me that a number of experiments comparing the response of these birds to a bait that could only be detected by sight as against their response to a bait that could only be detected by smell might lead to something of interest, so I set about the task.

Across the Schuylkill river from Conshohocken in Montgomery County, Pennsylvania, the ground rises suddenly, almost cliff-like, and rolls back to the south in a plateau. Its sides are mostly wooded and there are a few residences. A broad field lying on the top and near the edge of this table-land was chosen for the test, both because from time to time we had seen a number of Vultures there and because of the convenience with which we could watch their movements. To the south the country is composed of farm land and large estates. Woods flank the east. On the north stands an empty house so girdled with trees and bushes that the field is only visible from an upper window. It was from this house that we carried on our observations. Beyond the house lie more woods dropping down the slopes to the lowlands. A road with a high hedge on either side extends along the west and, on the other side of it, Gulph Valley.

At five-thirty on the morning of March 12, 1927, a friend and I arrived at the field for our first test. Dawn was reddening behind dark woods. The sky was clear with a few scattered clouds. We placed a small, stuffed deer, a rejected museum specimen, on a rock and arranged it in the most lifeless attitude. The gray background was selected because it exposed most clearly the tawny hide. As this was a sight test, our problem was to make sure that there was no real carrion in the neighborhood. How to do this, puzzled us at first; but at length we found a way. We brought with us a large dog who was by natural ability and subsequent culture a

collector of smells. His capacity for finding anything putrid amounted to absolute genius. While we worked, he ranged free. Eleven feet from the deer, a camera was set up and covered with sticks. At six-ten, our task being completed and our scavenger having found nothing, we retired to the house and began to watch.

A few minutes before sun-rise, at six-thirty, a Vulture sailed over the deer at a height of about twenty-five feet. He circled around for several seconds, apparently inspecting the situation. While watching him, we suddenly noticed another on a tree about four hundred yards from the bait. After a moment or two of investigation, the first disappeared over a rise in the ground to the south and the other followed immediately. This was the only response we got to this test, although we kept watch and watch all day until nearly sun-set. We saw no more Vultures and got no pictures.

Clearly, the two that came had found the deer by means of their eyes; unless they were able to smell, and had a taste for, the embalming fluid with which the deer had been treated some twenty odd years ago. But, had the Vultures when near seen that the animal was only a dried skin? Had they gone off because they had failed to detect an odor at close range? Had the heap of sticks around the camera frightened them? This last did not seem likely, but it was a possibility.

On the morning of March twenty-seventh at five-thirty we set out the deer again, this time without the camera and in the long grass where it was difficult to see. The sky as before was clear except for a few clouds. At six-twenty, four Vultures swooped over the hill from the south-east. They glided down much closer to the deer than the one had done on the former occasion, but went past without stopping, crossed the road, floated out over the valley to the north-east, rising higher and higher and finally disappeared behind a house on a neighboring hill.

I had fully expected that Vultures would come circling out of the sky in slow majestic turns, dropping lower and lower until they settled at last on the false banquet I had prepared. This idea never seemed to strike the Vultures, for each time they rushed up from somewhere or other without the slightest warning.

It began to rain at half past eleven, so we removed the deer and concluded our work for the day.

One of the questions was apparently solved. The camera had had nothing to do with the bird's refusal to alight.

Our next experiment was on the sense of smell. Dawn on April sixteenth was calm with a few clouds. A hole was dug about four hundred yards from the house, that is to say, farther than the deer had been. We placed in it about eleven pounds of fairly fresh, very fatty meat and covered it with grass. All was in order at a quarter to five. As the light increased, a slight wind sprang up which may have blown away some of the grass and exposed the carrion. At five o'clock a Crow came down and seized upon the meat like Jockser Daly upon the whiskey. He tore and gobbled so fast that he had to stop shortly and rest, but his breath once regained, he was at it again harder than ever. When another Crow, whom we shall call Jackie Boyle in order to distinguish him, came drifting up from the east, a little tragedy was enacted which proved that some crows are black and others shady. Jockser, on observing Boyle, made some rapid calculations and just before Boyle got where he could see the meat, Jockser flew cawing loudly toward the wood. Boyle turned and flew screaming after him. In a few minutes one lone Crow came winging back and went for the steak.

At half past one a Vulture came and picked at the meat for a little while, then took flight again. The bait had undoubtedly been uncovered by the Crows before this, if not by the wind.

We saw nothing more although we remained on watch until sun-down, so we buried the meat.

My friend repeated this experiment again on June nineteenth. The meat which was used this time was two weeks old and very rank. It was placed in the same spot as before and covered with sackcloth, held down by wooden pegs and the edges covered with soil. There was a fine Scotch mist at dawn which kept up most of the day. No Vultures came.

On June twenty-first, we made the last experiment, using the same piece of meat. If it had been strong before, it was Herculean now. We fixed it as before and put the deer beside it to see how the combination would work. It was a bright sunny day and we were at our post at nine in the morning. We watched all day, but saw no Vultures. The deer, we removed that night, but left the

meat, covered as it was, for three more days. It was not, during that time, disturbed by bird or mammal.

I am far from thinking that these experiments form a positive proof one way or the other, but I do believe that they back the theory that the Turkey Vulture sees and does not smell his food.

Humble as these experiments were, they contributed one martyr who suffered durance vile for the cause of science. We had a colored factotum whose duty was to get us up in the morning, transport us to the scene of operations and act as cook while we kept watch. He failed to show up for one experiment and this was the explanation he gave the following day.

"Well, sah, Ah set out fo' you' place all right. But when Ah got along down to Fifty-foef street, de cops was raidin' de Syndicate, and Ah stopped to watch 'um. 'Cose, Ah wasn't doin' nothin'. When dey stahted loadin' de fellahs into de wagon, one of de cops grabbed me too. Ah says, 'Mistah, yo's mistaken. Ah ain't in wid dis bunch.' He says, 'What yo' doin' heah den?' Ah tells 'im Ah'm goin' to mah work out at Rosemont. He says, 'What work yo' goin' to do at two thirty in de mawnin'?' Ah says, 'Huntin' buzzahds.' and just about den he slammed me in de wagon."

Rosemont, Pa.

A NEW RACE OF FRANCOLINUS SQUAMATUS FROM TANGANYIKA.

BY H. B. CONOVER.

IN identifying some Francolins collected in Tanganyika and Uganda, it has been found that specimens of *Francolinus squamatus* from the Usambara District southeast of Mt. Kilimanjaro belong to an unnamed race. This, therefore, may be known as

Francolinus squamatus usambarae, subsp. nov.

Type from Magamba, 8 miles north of Loshota (Wilhelmstal), Usambara District, Tanganyika Territory. Altitude 5200 feet. Adult male in the Conover Collection, Field Museum of Natural History. Collected June 14, 1926 by H. B. Conover. Original number 1201.

Characters.—Differs from all other races of *Francolinus squamatus* by the dull black markings on the head, which consist of (1) a dull black line extending from behind the ear coverts forward over the ear to the back of the eye and continued faintly over the eye above a white superciliary stripe, (2) a streak of thickly spread dull black spots beginning at the gape and extending below the eye to below and behind the ear coverts where they merge into the dark brown markings of the neck; although always very conspicuous, they vary somewhat in density in different specimens, but are always most widely scattered at the gape and densest under the ear coverts. These spots also continue about the lower edge of the white throat, but are duller, more brownish and more scattered. White of throat purer and more sharply contrasted with sides of head and foreneck. Lores and superciliary stripe pure white.

The upper parts are nearly plain, lacking the conspicuous vermiculations observed in allied forms. Below nearest to *kapitensis*, but throat pure white instead of pale grayish.

Description.—Feathers of the pileum sepia, each feather edged very indistinctly with light gray. Lores, superciliary stripe and throat pure white. Forehead whitish with a dull black spot at the tip of each feather. A narrow dull black line extending from behind the ear coverts over the ear to back of the eye and continued faintly above the white superciliary stripe. This black line is separated from the auriculars by a more or less inconspicuous whitish line, a continuation of the superciliary stripe. Sides of face white, densely spotted with small dull black spots which are densest under the ear coverts and more scattered at the gape. These spots are continued about the lower edge of the white throat, but are duller and more brownish. Ear coverts plain grayish brown. Feathers of the sides

and back of the neck with a rounded spot of black, bordered laterally by conspicuous light gray (almost white) and a bright brown spot at the extremity. Foreneck the same only slightly duller, with black spots reduced. Mantle and wing coverts dark brown, widely edged, except at tip, with dull gray. Lower back, rump, upper and under tail coverts, and tail pure dark brown (unvermiculated), slightly deeper along the shaft. No vermiculations on upper parts except on outer edges and tips of secondaries. Feathers of the chest brown, widely edged with dark gray. Rest of under parts dull brown, widely edged with dull gray, except that on the lower breast and upper abdomen the feathers are edged with dirty white. Lower belly dark drab. Bill and feet coral. Iris brown. Wing (flat) 197, tail 115, culmen (exposed) 26, tarsus 52, middle toe (with claw) 52 mm

Range.—Probably confined to the Usambara Mountains.

SPECIMENS EXAMINED.

Francolinus squamatus squamatus.—CAMEROON: Bitye, River Ja 1 ♂;[1] Sanaga River, Sakbayeme 1 ♂;[1] Son-Tenjam 1 ♀;[1] Elat 1.[2]

Francolinus squamatus zappeyi.—KENYA: Victoria Nyanza Lake 1 ♂[3] (type); Eldoma Ravine, el. 7500′ 2♂;[1] Molo 1 ♂.[2] UGANDA: Entebbe 1 ♀;[1] Kigezi 2 ♂, 2 ♀;[1] Were 1 ♂.[3]

Francolinus squamatus keniensis.—KENYA: Nyeri, el. 5943′, 1 ♂ (type) 1 ♀;[4] Wambugo, el. 5500′ 1 ♀,[4] Kenia 1 ♂, 1 ♀.[3] ABYSSINIA: Ladu, Sisamo 1 ♂.[2]

Francolinus squamatus kapitensis.—KENYA: Juja Farm, Athi River 1 ♀ (topotype);[4] Nairobi 1 ♂.[4]

Francolinus squamatus maranensis.—TANGANYIKA: Maranu, Mt. Kilimanjaro, el. 5000′ 1 ♂ (?) (type), 1 ♂;[4] Mt. Kilimanjaro, el. 7000′ 1 ♀.[4]

Francolinus squamatus usambarae.—TANGANYIKA: Magamba, Usambara 1 ♂ (type), 2 ♀, 1 ♀ juv.;[1] Phillipshof, Usambara 1 ♂.[3]

Mackworth-Praed. (Ibis, 1922, p. 133) says he cannot separate Kilimanjaro specimens from those of Kenia or of the Athi Plains near Juja. This does not agree with my conclusion. Two birds before me, one from Nairobi and another from Juja (topotypical

[1] Specimens in Conover Collection, Field Museum, Chicago.
[2] Specimens in Field Museum, Chicago.
[3] Specimens in Museum of Comparative Zoology, Cambridge.
[4] Specimens in U. S. National Museum, Washington.

of *kapitensis*) are much grayer on the back and paler below than birds from Kilimanjaro or Kenia. In comparison with *zappeyi* they are darker on the belly and grayer on the upperside.

F. s. dowashanus (Madarasz) seems to be a synonym of *zappeyi*. Madarasz's description fits the type of the latter and the type localities are probably very close together.

Mearns's type of *maranensis*, although marked as a male, is undoubtedly a female, as the specimen shows no sign of spurs and is the same size as two other females from the same region. It also has apparent marks of immaturity on some of its secondaries.

Keniensis and *maranensis* are very similar, but the latter has the tail banded with black. This at first sight seems to be a mark of immaturity, but a juvenile female from Usambara does not show this banding. All three Kilimanjaro specimens have the tails banded. Kenia birds have the tail vermiculated.

A bird from southern Abyssinia which I have placed under *keniensis* is not typical. The feathers of the lower breast and belly have much wider and whiter edges and the upper parts are grayer and more heavily vermiculated with black.

I am indebted to the officials of the following institutions for the loan of specimens necessary for this investigation, and especially to the last two for the loan of types: Field Museum of Natural History, Chicago; Museum of Comparative Zoology, Cambridge; U. S. National Museum, Washington.

6 Scott St., Chicago, Ill.

A NEW CENTRAL AMERICAN FLYCATCHER.[1]

BY A. J. VAN ROSSEM

IN going over some Guatemala material in the Dwight Collection in the American Museum of Natural History, Dr. Dwight called our attention to the fact that the bright green *Empidonax* which has currently passed as *salvini* did not agree with the original description of that form. Later examination of the type of *salvini* and of all other material available in the U. S. National Museum shows that Dr. Dwight was correct in his contention and that the common form resident from Chiapas to Nicaragua has heretofore been without a name. It is with particular pleasure that we name this bird for Dr. Dwight.

Empidonax flavescens dwighti, subsp. nov. DWIGHT'S FLYCATCHER.

Type.—Male adult, no. 18,463, collection of Donald R. Dickey; Los Esesmiles, Chalatenango, El Salvador, C. A.; altitude 8,000 feet; Upper Tropical Zone; February 26, 1927; collected by A. J. van Rossem; original no. 11,326.

Subspecific characters.—Resembles *Empidonax salvini* Ridgway (not of authors), but coloration in general brighter and more yellowish green (less olive); orbital ring broken instead of complete; wing bands yellowish green instead of buffy. Resembles *Empidonax flavescens* Lawrence in having the orbital ring broken on the upper eyelid by a wedge of green about 2½ mm. wide, but differs in having the color throughout purer green, and in lacking entirely the ochraceous or fulvous wash on the chest.

Range.—Resident in the highlands from Tumbala, Chiapas, Mexico, south through Guatemala and El Salvador to San Rafael del Norte, Nicaragua. In El Salvador it is resident throughout the year in the Upper Tropical Zone.

Remarks.—The misconception which has existed in this connection probably arose from the fact that the description of *Empidonax salvini* in the 'Birds of North and Middle America'[2] was based almost certainly on a specimen of *dwighti* instead of on the type of *salvini*. This discrepancy is obvious if comparison

[1] Contribution from the California Institute of Technology.

[2] U. S. National Museum Bulletin 50, pt. 4, 1907, p. 582.

is made between the original description[1] and the description in 'Birds of North and Middle America'. As far as we now know the type of *salvini* remains unique.

The difference between *flavescens* of Costa Rica and *dwighti* as represented by Chiapas, Guatemala and El Salvador specimens, is striking, and on the basis of the material examined, we would consider them specifically distinct. Only the fact that Dr. Hellmayr states[2] that three skins from San Rafael del Norte, Nicaragua are intermediate, influences the writers to treat them as conspecific. On the other hand we are by no means convinced that *flavescens* and *dwighti* (*salvini* of authors) should be regarded as subspecies of *Empidonax difficilis* Baird.

Specimens examined.—Empidonax salvini: the type. *Empidonax flavescens flavescens:* Costa Rica: many specimens, including the type. *Empidonax flavescens dwighti:* Mexico: Chiapas, Tumbala, 1. Guatemala: Coban, 1; Volcan San Lucas, 4; Volcan Agua, 1; Finca Sepur, 2; Tecpam, 1. El Salvador: Los Esesmiles, 5, including the type; Mt. Cacaguatique, 7; Volcan Santa Ana, 8. Total 30.

514 Rosement Ave.,
Pasadena, Calif.

[1] Ibis, 5th Ser., 4, October, 1886, p. 459.
[2] Field Mus. Nat. Hist., Zool. Ser. 13, pt. 5, 1927, p. 214, footnote.

THREE NEW JAYS FROM EL SALVADOR.

BY A. J. VAN ROSSEM.

CRITICAL study of the Jays collected in El Salvador in 1927 necessitates the description of three new forms from the cloud forest (Upper Tropical Zone) regions of the interior or Cordilleran mountains. All of these are representatives of Mexican and Guatemalan highland species, two of which apparently reach their extreme southern limits at this point. Further comment on these and other members of the Family *Corvidae* will be made in our final report, now nearing completion.

As the region in question is on the Salvador-Honduras border it is to be expected that these races are not as local as might be inferred from their present known range. Northeastward from Los Esesmiles stretches a large area of high, broken, mountainous country in which most of the forms from the Upper Tropical Zone of El Salvador will very probably be found to occur.

Cyanocitta stelleri lazula subsp. nov.

SALVADOR CRESTED JAY.

Type.—Male adult, no. 18,353, collection of Donald R. Dickey; Los Esesmiles, Dept. Chalatenango, El Salvador; altitude 8,000 feet, 'cloud forest'; February 17, 1927; collected by A. J. van Rossem; original no. 11, 216.

Subspecific characters.—Nearest to *Cyanocitta stelleri ridgwayi* and *Cyanocitta stelleri suavis* Miller and Griscom of Volcan Fuego, Guatemala, and the Matagalpa region of Nicaragua respectively, in possession of white on both upper and lower eyelids, but coloration darker than either; crest comparatively still darker and more contrasted with back; light area on chin and upper throat restricted as in *suavis*.

Range.—Cloud forest areas in the interior (Cordilleran) mountains of El Salvador.

Remarks.—The new race of Crested Jay it will be noted, is not intermediate between the two geographically nearest forms, but like *Cyanolyca* and *Aphelocoma* has reacted to the local environment in the way of darker coloration.

In working over the series of *Cyanocitta* we are especially indebted to Mr. Ludlow Griscom, who with Mr. W. deWitt Miller described both *ridgwayi* and *suavis*.

Specimens examined.—*Cyanocitta stelleri ridgwayi:* Guatemala; series from Volcan Fuego (including the type) and Quetzaltenango. *Cyanocitta stelleri suavis:* Nicaragua: San Rafael del Norte, 5 (including the type). *Cyanocitta stelleri lazula:* Salvador; Los Esesmiles, 11.

Aphelocoma unicolor griscomi[1] subsp. nov.

GRISCOM'S JAY.

Type.—Male adult, no. 18,181, collection of Donald R. Dickey; Los Esesmiles, Dept. Chalatenango, El Salvador; altitude 8,500 feet, 'cloud forest'; February 4, 1927; "breeding condition"; collected by A. J. van Rossem; original no. 11,044.

Subspecific characters.—Exactly intermediate in color between *Aphelocoma unicolor unicolor* (Du Bus) of southeastern Mexico and *Aphelocoma unicolor guerrerensis* Nelson of southwestern Mexico. Much darker and more purplish than *Aphelocoma unicolor coelestis* Ridgway of Chiapas and Guatemala.

Range.—Cloud forest regions of the Cordillera in El Salvador.

Remarks.—Although considered by Oberholser (Proc. Biol. Soc. Wash., 32, 1919, 135) as not only specifically but subgenerically distinct from *unicolor* we cannot but believe that *guerrerensis* is only a strongly marked subspecies of the former. The last vestige of doubt in this connection is removed by the discovery of the Salvador race, which bridges the color gap between the two. Oberholser himself sometimes found the tail shorter than the wing in *guerrerensis* and therefore overlapping proportionately with *unicolor*. We consider the longer tail of *guerrerensis* nothing more than an average subspecific character.

Oddly enough the present case parallels a condition observed in the *Aphelocoma californica* group where two superficially very closely related forms (*immanis* and *hypoleuca*) are separated by races bearing no close resemblance to either.

Measurements.—Based on ♂♂ only.

		Wing	Tail	Culmen From Base	Tarsus	Middle Toe Without Claw
A. u. guerrerensis	5	160–171 (166.2)	160–173 (168.0)	33.5–36.0 (35.1)	39.0–41.0 (39.9)	22.7–24.1 (23.3)
A. u. unicolor	5	158–166 (162.2)	153–166 (157.6)	31.4–32.5 (32.1)	38.0–41.2 (40.1)	22.6–24.0 (23.4)

[1] Named for Mr. Ludlow Griscom in appreciation of much helpful criticism of our work on Central American birds.

		Wing	Tail	Culmen From Base	Tarsus	Middle Toe Without Claw
A. u. coelestis	3	165–167 (166.0)	155–158 (156.3)	32.8–34.1 (33.6)	40.7–42.2 (41.4)	23.1–24.0 (23.5)
A. u. griscomi	4	162–171 (166.2)	158–166 (160.0)	33.3–35.1 (34.3)	42.0–43.1 (42.5)	22.2–24.0 (23.3)

Specimens examined.—Aphelocoma unicolor unicolor:[1] Mexico:

[1] From Bureau of Biological Survey.

Vera Cruz, Jico, 7. *Aphelocoma unicolor coelestis:*[1] Mexico: Chiapas, San Cristobal, 4. *Aphelocoma unicolor guerrerensis:*[1] Mexico: Guerrero, Omilteme, 7. *Aphelocoma unicolor griscomi:* El Salvador: Chalatenango, Los Esesmiles, 7.

Cyanolyca pumilo nigrogularis subsp. nov.

SALVADOR BLACK-THROATED JAY.

Type.—Male adult, no. 18,559, collection of Donald R. Dickey; Los Esesmiles, Dept. Chalatenango, El Salvador; altitude 7,800 feet, Upper Tropical Zone; March 7, 1927, breeding; collected by A. J. van Rossem; original no. 11,422.

Subspecific characters.—Resembling *Cyanolyca pumilo* (Strickland) of Mexico and Guatemala but lower throat glossy black, uniform with side of head and malar region, with posterior outline strongly convex and more sharply defined.

Range.—Upper Tropical Zone in the interior (Cordilleran) mountains of Salvador, from 7,800 to 8,700 feet.

Remarks.—Judging from the very few specimens we have been able to examine, there seems to be a decided increase in size from north to south. Chiapas specimens approximate the measurements given by Ridgway (Bull. 50, U. S. Nat. Mus., pt. 3, 1904, p. 321), while the three Salvador males range from 123.0 to 128.0 in wing, and 126.0 to 129.0 in tail. In color, Guatemala and Chiapas specimens appear identical.

Specimens examined.—Cyanolyca pumilo pumilo: Mexico: Chiapas, 3;[1] Guatemala, 2.[2] *Cyanolyca pumilo nigrogularis:* Salvador, 6.

514 Rosemont Ave.,
Pasadena, Calif.

[1] Bureau of Biological Survey.
[2] Dwight collection.

A NEW BLUE JAY FROM SOUTHERN FLORIDA.

BY W. E. CLYDE TODD.

THE collection of the Carnegie Museum contains eleven specimens of a Blue Jay from extreme southern Florida which appears to be separable from the form inhabiting the rest of that State, and which I propose to call

Cyanocitta cristata semplei, subsp. nov.

Type, No. 102,369, Collection Carnegie Museum, adult male; Coconut Grove, Florida, January 21, 1928; John B. Semple.

Subspecific characters.—Similar to *Cyanocitta cristata cristata* (Linnæus) of the South Atlantic and Gulf States, but general coloration paler, the under parts white, with less grayish suffusion, the lower throat with less bluish wash, and the upper parts paler and duller blue, with less purplish tone.

Remarks.—This new form is as much different from *C. c. cristata* as the latter is from the northern race *C. c. bromia*. Its pale coloration stands out well as the two series lie side by side. While occasional specimens from peninsular Florida (north of the Everglades) approximate in their pallor the characters above specified, it is only in the extreme southern part of the State that these characters become sufficiently constant and pronounced to justify giving a name to the individuals showing them. The type of *C. cristata florincola* Coues came from Hibernia, Clay County, according to Dr. Oberholser (Auk, XXXVIII, 1921, 83), and so could not in any event belong to the form here described, on geographical grounds alone.

In the average example of *cristata* the upper parts are "deep dull bluish violet No. 2" of Ridgway (as seen with the eye between the bird and the light), while the pileum is brighter, between "grayish blue violet No. 2" and "dull bluish violet No. 2." In the new race these parts are respectively "deep madder blue" and "deep plumbago blue." The specimen chosen as the type is in fresh plumage, and is rather brighter than the average of the series.

The new race is named in honor of Mr. John B. Semple of Sewickley, Pa., the collector of the type-specimen, in recognition of his interest in the work of the Carnegie Museum in general and in the birds of Florida in particular.

Carnegie Museum, Pittsburgh, Pa.

GENERAL NOTES.

Herring Gulls: A Correction.—I am indebted to Mr. Hoyes Lloyd, Canadian National Parks Branch, Ottawa, Ontario, for calling my attention to two errors that appeared in my paper entitled "The Migration of Young North American Herring Gulls," which appeared in the January number of 'The Auk.'

In Table 1 on page 51, the return record is given for a bird stated to carry band No. 378978. This number should be 378078. This error is apparently a typographical one that was not detected in reading the proof, as I find that the number is correctly given on my carbon copy of the manuscript.

In this same table, Herring Gull No. 385656 is listed as recovered at Port Hope, Ontario. The locality should be Lake Eabemut, near the Albany River, Ontario. This return was reported from the Fort Hope Post, Tashota P. O., via Cochrane, Ontario. This point is more than 700 miles north and west of Port Hope, Ontario, which is located on the shore of Lake Ontario, about sixty miles east of Toronto.

This last return was originally carded as Fort Hope, Ontario, but in preparing the map that accompanied the paper the draftsman was apparently unable to find this point and so concluded that Port Hope was intended. This change also was made on the card and so became incorporated in the accompanying table.—FREDERICK C. LINCOLN, *Biological Survey, Washington, D. C.*

Early Arrival of the Laughing Gull in Massachusetts.—March 31, 1928, at 8:45 A.M. I left Oak Bluffs, Martha's Vineyard Island, Mass., on steamer "Islander." There had been an easterly rain storm of considerable intensity the previous day, and this morning it was partly cloudy, wind rather strong northwest and the temperature was about 40°. About 30 Herring Gulls were in view, some flying near the steamer, on the lookout for anything eatable that might be thrown overboard or brought to the surface by the motion of the propeller. When about 10 rods from the wharf I was surprised and much pleased to see a fine adult Laughing Gull, (*Larus atricilla*) appear with the larger Gulls near the boat, gracefully wheeling and scaling, showing its marking very distinctly. It appeared considerably smaller than *argentatus* and the slaty black head, sharply defined from the pure white neck, the black primaries and red feet and bill were clearly visible. I had 10x glasses in my hand but they were not needed, the Gull was so near me. I could watch the bird for a minute or two only as it did not follow the steamer, as both species mentioned often do.

I am very familiar with *atricilla* as the species is an almost constant feature of the scene, in summer, at Oak Bluffs, where I have a shore cottage. The bird is also well represented in my collection.

I at once realized this was an early record, and think others may substantiate it as the winter and spring to date have been exceedingly mild.

Upon consulting four bird books—two of recent issue—the earliest spring arrival for this state was April 12 at Muskeget Island, which lies about 15 miles southeast of Oak Bluffs.

While a great amount of data has been amassed in recent, leading publications, I was much impressed with the very meagre record of the spring arrival of *atricilla* off the Massachusetts coast.—CHARLES L. PHILLIPS, *Taunton, Mass.*

The Gull-billed Tern (Gelochelidon nilotica) at Washington, D. C.—Mr. and Mrs. William J. Whiting and I spent the afternoon of May 20, 1928 off Hains Point, D. C., on a mud bar in the Potomac River. We were using 8x, 9x, and 16x binoculars. One of the larger Terns was seen flying down the river, and we all put our glasses on it immediately. The bill was solid black, being quite blunt and heavy and not needle-like. The tail but slightly forked, and the primaries had a dark edge. The bird was flying in a straight line, with steady wing beats, continuing in this manner until out of sight. The sun was behind us, furnishing a perfect light. I examined specimens in the U. S. National Museum and am absolutely certain of the identification. It has been previously recorded here, but there is some doubt about the record.—WILLIAM HOWARD BALL, *1233 Irving St., N. W., Washington, D. C.*

The Man-o'-war-bird (Fregata magnificens) at Cape May, N. J.—In 'The Auk' for 1926, p. 536, I recorded the occurrence of Audubon's Shearwater at Cape May on August 2 of that year, following the West Indian hurricane of a few days previous. Recently I have received from Mrs. Emlen H. Fisher of Germantown, Philadelphia, the record of another waif driven north at the same time. Mrs. Fisher's letter on the matter is as follows: "I saw the bird at Cape May, N. J., three days after the Florida hurricane that devastated Miami. It was an unusually large bird having a wing spread of nearly three feet, I should say. The wings tapered to a point and were of a decided and curious shape, appearing from the rear to be arched close to the body, above the level of the back. The bird appeared slate gray all over. It had a long bill bent over at the tip and a long curious tail like that of a king crab but slightly forked at the extreme tip. I could not decide whether there was really a fork or whether two long outer tail feathers were crossed at the tip when folded. The neck was either drawn in like a Heron's, in flight, so as to form a bulge beneath the base of the bill, or else there was a sort of pouch there, but not forming a part of the bill as in a Pelican. The bird hung perfectly motionless facing the wind for fifteen or twenty minutes not moving an inch in space, apparently, although there was a strong wind blowing, nor moving a feather save to turn his head to look at the small group of people gathered below. It finally flew to the south where it disappeared."

Mrs. Fisher wrote to ascertain, if possible, the identity of the bird as she had no idea as to what it might be. I think no one who has ever seen a Man-o'-war-bird could have the least doubt as to the identity of this specimen so accurately described by Mrs. Fisher. It constitutes the first satisfactory record of the species for New Jersey, although there is a mention in Maynard's 'Birds of North America' of a specimen mounted by J. R. Beath, a taxidermist of Philadelphia, which had been secured near Cape May Court House, N. J., in 1877, but I have never been able to trace the specimen or ascertain the name of the collector.—WITMER STONE, *Academy of Natural Sciences, Philadelphia.*

Phalacrocorax a. albociliatus in Colorado.—On October 17, 1927 there was brought to me for identification, a bird that was killed on a lake about three miles from town.

I identified it as a White-crested Cormorant, but not being wholly certain of this determination, the skin was sent to Dr. Bergtold of Denver for his opinion. He also being uncertain as to the sub-species, sent the skin to the American Museum of Natural History, whose Division of Birds reports that the specimen is undoubtedly *P. auritus*, probably *albociliatus*. The immaturity of the bird prevents making an iron-clad subspecific identification.

The occurrence of this bird on the Pacific slope leads me to hold that it is subspecies *albociliatus*, making a first record for Colorado of this subspecies. A. R. MCCRIMMON, *Montrose, Colorado.*

White-fronted Goose (Anser albifrons gambeli) in South Carolina.—Referring to the article in "Notes," of the April 1928 'Auk,' by Mr. Arthur T. Wayne, it occurred to me that two more early records could be added for South Carolina. One taken on January 29, 1866, and one on February 3, 1866. (See my Journals now in the Boston Society of Natural History). I was shooting on those dates on the Lownes, or Walter Blake plantations, where there were quite extensive rice fields which were watered from the Combakee river near Pocotaligo, South Carolina. For a blind I lay in a small gunning float which was dressed over with grass, a string of wooden decoys anchored in front of me.—On the above dates a small flock of four or five of these Geese appeared calling with a sort of maniacal laughter, as they flew past they gave me a long shot, and I brought one down wing broken. As the water was not more than twelve to eighteen inches deep, and the day being calm, there was not a ripple on the water of the rice field, which was free from bushes or trees. When the winged Goose struck the water I thought there was no hurry about picking it up, so I leisurely loaded my muzzle loading gun with powder wads and shot. On looking up to see where my Goose was, it had disappeared, thinking this strange I poled my boat all around without finding any sign of it, and I could not understand where so large a bird could have hidden. I finally gave the bird up as lost, when in passing

rather near a black looking stick which was not over one inch in diameter, with one end stuck in the bottom mud, and projecting about two or three feet above the water, I noticed what appeared to be a *pinkish* looking spot at the side of the stick close to the water, so I pushed the boat towards it to investigate, when much to my surprise out rushed my goose from the shallow water where it had been hiding. The bird had been completely submerged, only the bill being out of the water, I soon captured it. The other Goose mentioned was shot dead. This flock was the only one I saw during my two remaining weeks, and as I was out shooting every day in various localities I assume that this was the only flock living in the vicinity at that time.—GEORGE H. MACKAY, *Nantucket, Mass.*

Curious Action of Wood Duck.—I beg to report a very curious incident concerning a male Wood Duck. This duck—presumably migrating—arrived at Walden Pond, on the Pickering Creek, Chester County, Pennsylvania, about the third week of October, 1927.

On this pond at that time, were about 150 Wild Mallards which we had raised on our game farm, besides some Swan, Canada Geese, etc. There was also a pair of African Geese, which were supposed to make their home at my home farm, about three-quarters of a mile up the Creek from the pond. The Wood Duck, after spending about two or three weeks with the Mallards, joined these two domestic Geese and followed them everywhere. In fact, I believe, from personal observation, he has never been fifty feet from them since.

The next chapter began when the Geese returned to the home farm to nest. The duck stayed right with them, and, while the goose was nesting, stayed so close to the gander that it was more or less ludicrous.

The goose failed in her incubation, and is now back with the duck and gander, and all three spend a lot of time around the house, in the barn yard, and near the dog runs.

The Wood Duck imitates the Geese in everything they do. If they lie down, he does the same; if they walk, he walks with them, and he is as fearless of automobiles as they are. One can walk within three or four feet of him, and I do not know how much closer, as, of course, I am afraid I might frighten him, and possibly put him in mind to leave and not return.

He is a full-winged, healthy bird, and with his two guardians, attracts nearly as much attention as all the pure-bred live stock on the farms.—FRANK B. FOSTER, *Franklin Trust Bldg., Philadelphia, Pa.*

Little Blue Heron in the Chicago Region.—On August 15, 1926, I collected a male Little Blue Heron (*Florida caerulea*) in Lake County, Illinois, about two miles north of Waukegan. The specimen was in the white plumage with the primaries tipped with gray. Although Ridgway, in 'The Ornithology of Illinois,' says of this species,—"doubtless it occurs generally throughout the State," I have not found any records of the taking of specimens in the Chicago region.—STEPHEN S. GREGORY, JR., *Winnetka, Ill.*

The Yellow-crowned Night Heron Nesting in Logan County, Ohio.—Mrs. Ray Lovell of Columbus reported to the writer that on May 12, 1928, she observed a Yellow-crowned Night Heron (*Nyctanassa violacea*) at Indian Lake in Logan County, Ohio, and that she had succeeded in locating the bird's nest. On May 16, Mr. James S. Hine, Mr. Roscoe W. Franks and the writer visited the locality and found the nest as described by Mrs. Lovell. Two birds flew away as the nest tree was approached but one returned shortly and was collected by the writer. It was in adult plumage and proved upon dissection to be the female. The skin of this bird has been deposited in the Wheaton Club Collection at the Ohio State Museum. This apparently constitutes the first Ohio record for the species. The nest, containing six well incubated eggs, was collected for the Museum by Mr. Franks.

It is interesting to note that the outline of the breeding range of the Yellow-crowned Night Heron in Bent's 'Life Histories of North American Marsh Birds' includes no locality nearer than southern Indiana. It seems that the nest found by Mrs. Lovell represents not only a new Ohio record but also a considerable northeastward extension of the known breeding range of the species.—CHARLES F. WALKER, *Ohio State Museum, Columbus, Ohio.*

Fulica caribaea from Carriacou, Lesser Antilles.—In view of the slight uncertainty that has attached to the specific identity of the Coots resident in the Lesser Antilles, it is of interest to record that in examining a series of faithful water color sketches made recently by the Rev. Sebastian Gates of Grenada, I noted a careful reproduction of the head of the Caribbean Coot, *Fulica caribaea* Ridgway. The painting is unmistakable in the broad, white frontal shield, which is light in color clear to the frontal feathering. In reply to a letter of inquiry it is learned that the sketch in question was made on the island of Carriacou in the southern Grenadines.

Mr. A. H. Clark[1] has reported *caribaea* as the resident bird of the Lesser Antilles on the basis of probability as he did not have specimens, so that the present record is definite proof of his statement. *Fulica caribaea* is now known north and east as far as Haiti and seemingly ranges through the southern islands as far as Grenada, so that its distribution is considerable. —ALEXANDER WETMORE, *U. S. National Museum, Washington, D. C.*

Baird's Sandpiper (Pisobia bairdi) in Florida.—A new species was added to the known avifauna of the State of Florida when, on April 22, 1928, a specimen of Baird's Sandpiper was taken near Pensacola. The bird was seen in company with a small group of Semipalmated Sandpipers (*Ereunetes pusillus*) on the beach of a small salt-water pond near the harbor entrance, where we had an opportunity to watch it for some minutes at short range. Its size and general appearance suggested the White-rumped Sandpiper (*Pisobia fuscicollis*), but the buffy breast and

[1] Proc. Boston Soc. Nat. Hist., vol. 32, 1905, pp. 247–248

lack of white upper tail coverts marked it as belonging to a species that was new to us. Accordingly, it was taken, and after careful examination, referred to *Pisobia bairdi*. The Bureau of Biological Survey, U. S. Department of Agriculture, Washington, D. C., has kindly verified this identification. Mr. A. C. Bent, in his 'Life Histories of North American Shorebirds' (Bull. 142, U. S. Nat. Mus., 1927), does not record the occurrence of this species east of Texas on the Gulf Coast nor south of Virginia on the Atlantic Coast.—Francis M. Weston and Charles L. Smith, Jr., *Pensacola, Fla.*

Spotted Sandpiper Escapes a Hawk.—Mr. M. P. Skinner's account of the Kingfisher pursued by a Sharp-shinned Hawk ('The Auk,' vol. XLV, No. 1. Jan., 1928, pp. 100–101) calls to mind an incident which occurred many years ago. As a boy, I spent much time along the Red River, near Moorhead, Minnesota. On one occasion a Spotted Sandpiper was flying up the river, low over the water as usual. Suddenly a small Hawk made a swoop at the flying bird and the Sandpiper promptly dropped into the water and disappeared. The Hawk turned and flew over the spot again, the Sandpiper's head appeared for a moment, then went under once more. This time the Hawk flew on. Again the Sandpiper's head appeared, watching to see if the coast was clear. Then the bird arose from the water and continued on its way.

At the time I did not know the species of Hawk and the incident never found its way into a notebook. I know now, however, that the Hawk was either the Sharp-shinned or Cooper's Hawk. I was familiar with the other Hawks of the locality and the picture in my mind is vivid enough to determine that much.—O. J. Murie, *U. S. Biological Survey, Jackson, Wyoming.*

The Hudsonian Curlew (Numenius hudsonicus) at Washington, D. C.—Mrs. T. M. Knappen and I were out on the Potomac River, just off Hains Point, D. C., in search of Limicolae on the morning of May 26, 1928. Situated here are several long, narrow stretches of mud and sand, which are exposed at low tide, this being the work of a dredging machine. We were in a rowboat and approached cautiously. Suddenly a cloud of birds arose before us and settled down. Imagine my utter amazement to see among them a flock of eighteen Hudsonian Curlews. We spent an hour there, taking particular notice of the long, curved bill and striped crown of the birds. The following day, May 27, Dr. Harry C. Oberholser and I visited the spot, finding a single bird. This is, I believe, the first published record for this region.—William Howard Ball, *1233 Irving St., N. W., Washington, D. C.*

Is Gallicolumba kubaryi of Hybrid Origin?—In my aviary at Oakland, California, during 1927, a male *Gallicolumba xanthonura* from the Marianne Islands mated with a female *Gallicolumba jobiensis* from New Guinea. The single squab produced by this union attained maturity

early in 1928. To the eye, it is indistinguishable from *Gallicolumba kubaryi* from the Caroline Islands.—E. W. GIFFORD, *University of California.*

The Passenger Pigeon in 'Encyclopedia Americana.'—In the recent edition of 'Encyclopedia Americana,' published in 1927, I find the following statements that seem to me to require some widespread denial—or authoratative confirmation.

On page 369, Volume 21, under the caption of Passenger Pigeon, the following statement occurs: "Under the protection of the game laws the bird seems gradually becoming more numerous in its old haunts, and may revive in considerable numbers, since food remains abundant for it, and natural enemies are diminished."

From Volume 22, page 80, I quote the following from the item Passenger Pigeon under the caption of Pigeons: "Formerly it ranged throughout North America east of the Rocky Mountains, and occasionally pushed even to the shores of the Pacific. It was most abundant, however, east of the Great Plains and in temperate regions. At the present time it has practically disappeared from most of this region and is now found in any numbers only in the upper Mississippi Valley and the borderland between the United States and Canada."

The most recent publication on American birds that includes the Passenger Pigeon is Volume 2 of the 'Birds of Massachusetts,' 1927, by Edward Howe Forbush. On page 55 the author writes regarding this species: "It is now generally regarded as extinct, and it would not be included in this volume were it not that several recent observations by responsible persons have led some people to *hope* [italics mine] that, as in the case of the Eskimo Curlew, some few individuals may have continued to exist until the present day."

On the same page, under the notes on the former range of the species, Mr. Forbush says: "Now generally believed to be extinct."

Mr. Forbush's article on the Passenger Pigeon is most exhaustive. In the thirty-eight pages devoted to the species he indicates a most thorough search for information of all kinds relating to the habits, range and abundance of this pigeon up to the time when all such records ceased, somewhere about 1909.

And when, with all available information on the subject at hand, he admits only the bare possibility of the species still existing as "some few individuals," and with other ornithologists generally in agreement with him, it would seem that 'Americana's' statements require quite a lot of confirmation before being accepted by students of ornithology. And what of the general public that is accustomed to consider any standard encyclopedia as a court of last resort!—H. H. BRIMLEY, *Raleigh, N. C.*

Swallow-tailed Kite in Ohio.—On April 29, 1928, near Camp Creek, on the west bank of the Scioto River, 25 miles south of Chillicothe, Ohio, a Swallow-tailed Kite (*Elanoides forficatus*) was identified by Mr. Conrad

Roth, of Portsmouth, and myself. Others in the party were Mrs. Roth and Miss Helen M. Gordon. The bird had alighted on the top of a dead sycamore, and presented a side view to the observers. The white head and underparts, the jet-black pointed wings, and large size, were most conspicuous characters. In fact, when seen from a distance, on account of its length, the bird was first taken for an Osprey—one had been seen the same day several miles further south, along the river.

There have been no records of the Swallow-tailed Kite in Ohio for the past thirty years. Rev. W. F. Henninger noted a specimen shot in Ross Country, near Chillicothe, in August, 1898. This report is therefore submitted for the benefit of other students of Ohio bird-life.—Robert B. Gordon, *2281 Indianola Ave., Columbus, Ohio.*

Goshawk on Tampa Bay, Florida.—On January 25, 1928, while visiting Mr. and Mrs. Harold P. Bennett at their home at Maximo Point, in the outskirts of St. Petersburg, Florida, Mr. Bennett, who is the warden in charge of the nearby federal bird refuges of Tampa Bay, told me of a Hawk, strange to him which he had shot while it was devouring one of his fowls, on November 15, 1927. The description of the size of the bird and its plumage as given me both by Mr. and Mrs. Bennett, indicated an adult Goshawk (*Astur atricapillus atricapillus*). Being shown where the Hawk had been buried I disinterred the remains and sent all the large bones found to the Biological Survey for identification. The skull and upper vertebrae were missing, the burial place having been found by some scavenging mammal.

The Biological Survey wrote me on February 9, 1928, as follows: "The bones which you sent have been compared with skeletons in the National Museum collection and prove to be unquestionably those of a Goshawk. This furnishes the third Florida record and the most southerly one known." —Wm. G. Fargo, *Jackson, Michigan.*

Notes on the Golden Eagle (Aquila chrysaetos) in Colorado.—The first example of melanism in a Golden Eagle to come to my notice, is a mounted specimen in the Colorado College Museum in Colorado Springs. At first sight the appearance is that of an all black bird, but the golden or rather chestnut-brown head and neck feathers are discernable beneath the black tips and the under-tail coverts are normal at the base. The plumage is unique in having a chestnut-colored patch on the breast about three by five inches which is concealed by the black tips of the feathers.

The specimen came from Cripple Creek and is presumed to have been killed near there.

Early one morning in March, 1926, when trees were white with frost and frozen sleet, two men left Colorado Springs for a coyote hunt. Some distance out, they began to see Golden Eagles sitting scattered over the plains and some on fence posts. They counted twenty-three. As they

approached the first Eagle on a post it attempted to fly but went to the ground within two or three rods, and the men realizing that it was coated with frozen sleet that prevented flight, ran it down and captured it uninjured. Five others seen were caught in the same way. These men, who are educated Indians from Oklahoma, told me they would ship the live birds to friends there. They said the Indians keep live Eagles in confinement and pluck them like Geese, for the tail and wing feathers, which are used in making war bonnets.

From the large number of Eagles together on this occasion, it seems probable that a flight had been driven to earth by the storm.—CHARLES E. H. AIKEN, *Colorado Springs, Colo.*

Hawks and Kingfisher.—At the risk of riding a rather old topic to death, we can add to the notes on the above topic that here Kingfishers habitually amuse themselves at the expense of our super-abundant Sharp-shins. Not only is the pursuit and escape a matter of daily occurrence over the grassy, many-channelled creek which flows under our windows, but it is hardly less common to see the Kingfishers approach and circle the seated Hawk. Once, when the latter refused to be "drawn," the Kingfisher lit on a limb forty feet away and fifty yards from water, and, vibrating with excitement and hatred, rattled his loud defiance. Again, we have seen the Kingfisher leave the water by over a hundred yards to look for a Sharp-shin which we could see, but he, at first, could not, in the tops of the tall aspens about our house. This time, however, the Hawk was intent on less noble prey, and refused to "play the game." Also, when we shot a Sharp-shin from the Kingfisher's dead limb above the creek, the wounded bird had scarcely struck the beach below before its hereditary enemy had taken its place, and was pouring down abuse and insult in a kind of ecstasy over this vicarious triumph.

With practice the accuracy of timing in the escape becomes remarkable. The final dip is delayed until the Hawk seems to be actually within striking distance, but he always passes over without striking, though the Kingfisher does not disappear beneath the surface. This raises the question of the limit of the size of the Sharp-shins prey, and whether the game is really played in grim earnest by either side. Our Black-headed Jays, (*Cyanocitta stelleri annectens*), for instance, perhaps less formidable birds than the Kingfishers, heed the threats of this Hawk only by standing alert, to dodge at the last moment into a protected position. We believe, however, that, given a fair stroke in the air and over ground, the Sharp-shin could kill either species.

It is worth noticing that two Kingfishers often chase and escape each other over water in the same way, in play. Without supposing this to be organized schooling, it is a game which has its application to the serious business of life.—THOMAS T. MCCABE, ELINOR BOLLES MCCABE, *Indian-point Lake, Barkerville, B. C., Canada.*

Abundance of the Golden Eagle in Pennsylvania in 1927–28.—Representatives of the Pennsylvania State Game Commission are of the opinion that the Golden Eagle (*Aquila chrysaetos*) has been unusually abundant during the past winter. Several definite records substantiate this belief.

On December 30, 1927, Mr. William Orr secured a specimen which had been accidentally shot near Newville, Cumberland County.

On January 17, 1928, near Mattawanna, Mifflin County, Mr. Jerome Kauffman caught a magnificent female in a steel trap which had been set and baited for a fox. The middle claw of its left foot was injured by the trap, but otherwise it was in excellent condition. Upon arriving at the offices in Harrisburg it ate ravenously. It was quiet in disposition while in its cage. It cast up large pellets of the indigestible bones, fur and feathers of the rats and Starlings which it ate. The basal half of its tail was white.

On February 15, 1928, at Potter's Mills, Huntingdon County, Mr. E. J. Jones caught in a fox trap a rather small but well-plumaged male. This bird was killed and forwarded to us for examination. Its wing spread was five feet, nine inches; its length was thirty-one inches; it weighed seven pounds, nine and one-half ounces. The somewhat barred appearance of the plumage of the scapulars and tertials and the extensive white base of the tail indicated immaturity.

On April 2, 1928, near Burnham, Mifflin County, some boys found a dead Golden Eagle. It had, apparently, been shot. Other Eagles, many of them of this species, no doubt, have been noted this winter in the mountainous counties. It is probable that the abundance of small game has had a good deal to do with luring these comparatively rare visitors to this region.—George Miksch Sutton, *Game Commission, Harrisburg, Pa.*

Roadrunner first Discovered by Lieut. Zebulon Pike.—The Roadrunner *Geococcyx californianus* was not known to science until 1829, but Lieut. Pike found it in Colorado in 1806, while following the course of the Arkansas River nearly to its source. On Christmas day, 1806, when he was in the valley above the Royal Gorge he made this entry in his notebook, "Caught a bird of a new species by a trap made for him. This bird was of a green colour, almost the size of a Quail, and had a small tuft on its head like a pheasant, and was one of the carnivorous species: it differed from any bird we ever saw in the United States." Pike further says that he kept this bird in a cage and fed it meat, and that when a second bird of the same kind was put in the cage it was killed by the first occupant. All of which is applicable to the Roadrunner and to no other bird of the region.—Charles E. H. Aiken, *Colorado Springs, Colo.*

Calandra Lark in Delaware Co., Pa.—On April 15, 1928, while skirting along a corn field at the edge of an extensive meadow in Darby

Township, Delaware County, Pa., I was attracted by an unfamiliar bird song. To quote from my notes, it was "a continuous twittering, suggesting a Prairie Horned Lark, interspersed with abrupt, harsh notes and clear pleasing tones; altogether a jumbled variety of calls, mimical in nature." Having seen and heard a Mockingbird in the vicinity a week before, I presumed the singer was the same individual, but upon investigation, found I was mistaken. The bird was located standing in the short grass delivering his variety of calls and whistles, clear, harsh and buzzing in quality. The bird seemed about the size of a Horned Lark. In appearance (at 100 yards) the back appeared to be a grayish brown. Invariably the bird's back was toward me, and only once was a side view possible, showing the breast to be grayish white with a blackish band on the upper breast. No head markings were visible through eight power binoculars. The bird soon flushed, exposing white on the outer tail feathers, as well as a conspicuous white band on the wings along the tips of the secondaries. Its flight was strong and rapid, somewhat like that of the Cowbird, and a soft but audible "qut-qut-qut" was uttered as it mounted higher and higher, finally disappearing over the treetops. By process of elimination I deduced that the bird must be a Longspur, most likely *lapponicus*, although it seemed a late date for this species. A perusal of available literature and a survey of skins at the Academy of Natural Sciences, Philadelphia, did not, however, satisfactorily confirm my deduction. The bird appeared to be too large for any of the Longspurs. The white wing stripe and the musical calls were not suggestive of *calcarius*. The bird was heard giving perfect imitations of the call notes of the Goldfinch, Meadowlark and Barn Swallow when first heard.

For the next three weeks the bird was observed on numerous occasions, but never at close range, since it was very wary. It was most readily found in the late afternoon when it could be heard singing from the ground. Only once did I hear it sing in flight. The following is a list of birds whose songs it imitated: Goldfinch, Meadowlark, Horned Lark, Barn Swallow, Chimney Swift, Robin, Catbird, Killdeer, Sparrow Hawk and Pipit. These imitations were perfect, and I am sure would have deceived the most competent observer.

On May 2, with a fellow member of the Delaware Valley Ornithological Club, Mr. Victor A. Debes, the unknown songster was again seen in good light, at which time it was noted that the black band did not extend completely across the breast. Four days later Messrs. Julian K. Potter and Richard Bender (fellow club members) were shown the bird which was seen and heard to good advantage. As it was still impossible to identify the bird, it was collected and presented to Dr. Witmer Stone, who identified it as *Melanocorypha calandra*, generally known as the Calandra Lark, an inhabitant of southern Europe.

To quote from Dresser's 'Birds of Europe,' Vol. IV, this species is "common in Spain, a permanent resident of central and southern Italy,

the commonest Lark in Greece—wild and wary—a good mimic." Dresser is reluctant to believe that this species ever occurred in America. He states, "Swainson has given it a place in the 'Fauna Boreali Americana' on authority of a dealer and afterwards on that of a specimen in the British Museum, said to be from the Fur Countries and presented by the Hudson Bay Company. This is undoubtedly an error." It is noted for its singing ability and for this reason "many are taken when young and kept in cages."

Accordingly, this individual is quite likely an escaped cage bird. However the bird's actions and general appearance would not support this statement. It was exceedingly wary, and was a male in robust physical condition. The plumage was not faded or worn, the feet were normal and free from disease, and the claws were clean and sharp. How it reached this continent will probably remain an unsolved mystery!—JOHN A. GILLESPIE, *Glenolden, Pa.*

Starling at Madison, Wisconsin.—The Starling (*Sturnus vulgaris*) has reached Dane County. On March 18, 1928, while driving towards Lake Kegonsa to look for waterfowl, a flock of 40 birds flew across the road near the outlet to Lake Monona. From their flight, I felt certain that they were Starlings. They fed for the most part in a large meadow, but were so restless and wary that four hours of intensive work failed to provide a single shot. The birds fed in one spot for only two or three minutes; and then were gone to a distant portion of the field. The arrival of a Robin or a Meadowlark was sufficient to send them into the air. This wariness was entirely unexpected from my limited experience with the species in the East.

I made a third attempt in the company of Mr. John Main on the afternoon of March 20. This was successful. After one of the customary irruptions, the flock alighted near a low bank. A hurried approach, literally *ventre à terre*, brought me within range, and as the birds rose into the air I secured three. This is the western-most record for Wisconsin and constitutes the only large flock reported. H. L. Stoddard ('The Auk,' 40, 537) obtained two birds in the Milwaukee region in February, 1923, and S. Paul Jones (Ibid. 44, 104) found a pair breeding near Waukesha in June, 1926. These data indicate that the spread of the Starling has been slow and not extensive in Wisconsin.—A. W. SCHORGER, *2021 Kendall Avenue, Madison, Wisconsin.*

An Epidemic of Albinism.—While touring the lowlands at the southern extremity of Bellingham Bay, Washington, January 8, 1928, Mr. E. J. Booth and I came upon a flock of approximately 500 Brewer's Blackbirds (*Euphagus cyanocephalus*). We soon observed that many of the birds were more or less spotted with white. At least two showed white tails, and others white quills in one or both wings, while yet others exhibited various less conspicuous spots and blotches of white. The

birds were wild and restless and were continually making short flights as we approached. At first it was our suspicion that these birds had come in contact with fresh paint or some other coloring agency; for such a widespread display of albinism was altogether foreign to our experience. Eventually it was decided to get out the shotgun with a view to securing a typical specimen of these maculated birds. The flock soon alighted at a convenient distance and one of the white-tailed birds was selected as the target. Of course the shot pattern included in its scope a number of others, but it could not be helped. After the shot we picked up fifteen dead birds. On examining them we found that no less than seven showed distinct white markings, mostly among the smaller feathers of various parts of the body. The white-tailed bird had also some of the wing quills of the same color, with minor feathers elsewhere showing white. We have the skins of the seven albinistic specimens. Truly, "birds of a feather flock together," at times.

We had no reason to think that the fifteen birds secured were not fairly representative of the flock. When seemingly more than 40 per cent of a large flock of birds show evidences of albinism, an explanation will be welcomed. It perhaps suggests a close blood relationship, and shows a flock solidarity during their winter wanderings worthy of an organized tribe. Possibly they represent the summer Blackbird population of some particular valley or other isolated area in Alaska or British America.—J. M. Edson, *Bellingham, Wash.*

Redpolls in Michigan in Summer.—During June, this year, I was about deluged with Pine Siskins. The first ones came in June 7 and they were around in numbers until June 29. June 19 I counted 500, and there were more, all over the ground just outside my dining room window. I banded between 250 and 300 while the birds were here and could have banded two or three times as many if I could have devoted more time to it. All the birds banded in June, 273 (except 9 showing no yellow whatever) had more or less yellow on wings and tail and 91 of these were more or less tinged below, the great majority greenish-yellow, a few greenish-buff and one or two just a straight greenish tinge. On several very highly colored birds the tinge extended to the upper parts, particularly the head and rump, and in a few cases the greater coverts were edged with yellow, not buff.

Of the tinged birds those with most yellow on wings and tail were the most highly tinged, no birds showing very little yellow on wings and tail, which I took for the younger birds, had any tinge below. From this I would say that the older the bird the heavier and brighter the tinge. My card records furnish the following data:

Birds tinged below—

With less than average amount of yellow on wings and tail	8
With average amount of yellow on wings and tail	27
With more than average amount of yellow on wings and tail	56

After July 1, I banded 20 birds without a trace of yellow anywhere and one, No. 98380A, July 12, with a new tail half grown, edged a dull greenish-yellow with a little dull yellow at base. It had no yellow on wings, except a faint dull greenish-yellow edging to the primaries. The first of these dull birds was No. 98208A banded June 18, next No. 98302A, June 23, then I got four June 25, two June 27, one June 28, 19 in July and one in August. These looked just about like the others except for the lack of yellow markings. Five of these I wish to take up in detail from my card records—

No. 98208A banded June 18—dirty, no yellow, on repeats July 14 and 19 no further comment. On repeat Aug. 17—molting, no tail, no yellow, upper mandible dark except at base which was a rather bright orange-buff. Lower mandible whitish, at base orange-buff. Sides bright buffy. Rump golden brown.

No. 98375A banded July 6—no yellow on wings or tail. A very narrow dull grayish-white edging inner webs of tail feathers, on repeats July 7 and 8 no further comment. On repeat Aug. 29—under tail coverts heavily streaked. A few dusky feathers over bill, chin and throat patch dusky. Bill with narrow center line of black near tip. Both mandibles nearly all yellow turning into orange at the base, more orange on lower than on upper. A small patch of streaked reddish on head. New tail nearly grown, a few of the outer feathers only half grown.

No. 98379A banded July 11—No yellow wings or tail. Greater coverts edged dull white, tinged brown back from edge. On repeat July 24—some tail feathers missing. On repeat Aug. 2—sides buffy. On repeat Aug. 19—new tail not fully grown. A few dusky feathers just over bill. A reddish crown-patch, not solid but streaked. Dark patch on chin and throat nearly black. Tinged brownish or buffy on breast, sides, flanks and under tail coverts. Under tail coverts heavily streaked. A few feathers on breast and rump tinged pinkish or rose. A narrow line of blackish down center of both upper and lower bills near tips. Bills whitish or grayish near tips turning into yellow and then into what I would call bright burnt orange. The lower mandible had considerable more of this orange color at base than the upper. On repeat Aug. 28.—brighter buffy below. On repeat Aug. 29—no further comment.

No. 98385A banded July 13—no yellow, coverts edged dull white tinged brown, brown darker back from edge. Some tail feathers missing, on repeat July 23 no further comment. On repeat Aug. 29—sides buffy, chin blackish. Two feathers rump very faintly tinged pinkish. Tail not quite fully grown. Upper and lower mandibles about as in No. 98,379A.

No. 98406A banded Aug. 26—bird quite dirty. Molting all over except possibly primaries. Only four tail feathers. No signs of any yellow and could distinguish no red on head. Upper mandible with a little reddish or burnt-orange at base, considerably more on the lower.

Of the five described No. 98375A No. 98379A and No. 98385A were undoubtedly Redpolls and No. 98208A and No. 98406A probably Redpolls. Except No. 98406A none of these birds had anything particularly noticeable about their bills when banded nor did any of the other dull colored birds. The noticeably light bills with orange at the base did not develop until August at least my earliest record for the five birds is August 17.

Several times while banding these plain colored birds I got the impression their tails seemed longer than usual. I did not give this much attention as many of the birds were molting their tail feathers and the tail of a bird with only half its feathers often looks longer than if it had the full complement. However, as the tail of the Redpoll is considerably longer than the tail of the Pine Siskin I think I slipped up badly in not measuring some of them. My only excuse is I had no idea there were any Redpolls around.

Now the question is—were all the other birds lacking the yellow tinge Redpolls? If so there were 29 young Redpolls in all without an old one in the lot. The earliest date being June 18 would indicate that possibly this year some Redpolls did not go as far north as usual to nest. Possibly our long cold spring this year (1927) might account for it. So far as I have been able to discover this is probably a record for the Redpoll anywhere in the United States in summer. I wrote the Biological Survey for information and the reply was "A most unusual occurrence as a hasty survey through our files fails to disclose any records for Redpolls in the United States in summer."—M. J. Magee, *603 South St., Sault St. Marie, Mich.*

Schistospiza Sharpe not Separable from Lophospingus Cabanis.—In the 'Catalogue of the Birds in the British Museum' (Vol. XII, 1888, Fringillidae) Dr. R. B. Sharpe proposed the generic name *Schistospiza* for *Emberiza griseocristata* D'Orb. and Lafr. This crested, gray, Bolivian finch had been usually referred to *Coryphospingus*, but Sharpe placed it between *Lophospingus* (*L. pusillus* of Argentina) and *Tiaris* (now *Charitospiza; C. eucosma* of Bahia and Matto Grosso, Brazil).

Schistospiza griseocristata is very closely related to *Lophospingus pusillus*, the only tangible structural difference that I can find being the form of the wing. In the former, the ninth (outer) primary is equal to or shorter than the third; in the latter, longer than the third (at most, equalling the fourth). Although *S. griseocristata* is a rather larger bird, its wing-tip is of virtually the same absolute length as that of *L. pusillus*.

The general resemblance between these two species in form and coloration is so strong that nothing is gained by separating them generically, and I would advocate their inclusion in the one genus, *Lophospingus*.

Both species are of the same prevailing gray color, with extensive white ends to the outer three pairs of rectrices. In *L. pusillus* the head is black with broad white supra-auricular and malar stripes; gray in *L. griseocristata*, the longer crest-feathers slate color. But it is of interest

to note that in the immature plumage of the latter, there is a distinct white supra-auricular stripe.

Charitospiza, which agrees with *Lophospingus* in the style of the crest, and appears to be its nearest ally, is sufficiently distinguished by the narrower crest-feathers, longer wing-tip (ninth primary longer than fourth), slightly shorter, even tail, rather smaller, less heavy bill, the nasal operculum broader and better defined from the mesorhinium, basal half of all but the middle pair of rectrices white, and other differences in coloration.

Coryphospingus is separated by the very different form and color of the crest, shorter upper tail-coverts, and slenderer bill. *Rhodospingus* has the longest, slenderest bill of the group, the shortest tail, with subacute rectrices, and unique coloration. As in *Coryphospingus* there is no white in the tail, and in both these genera the nasal operculum is well defined as in *Charitospiza*. In *Lophospingus* the operculum is thickened and cornified and blends with the mesorhinium.

Reichenow (in Die Vögel) unites *Coryphospingus* and *Rhodospingus* in one genus, *Charitospiza* and *Lophospingus* (*L. pusillus*) in another. *Schistospiza* is not mentioned. All these genera with the exception of *Schistospiza* seem to me sufficiently distinct.—W. DEW. MILLER, *American Museum of Natural History, New York City.*

Additional Record of Harris's Sparrow in Michigan.—I am able to add one more record to the list of specimens of Harris's Sparrow (*Zonotrichia querula*) taken in Michigan, an immature male which I collected at Huron Mountain, Marquette County, Michigan, on October 13, 1924.

The late professor Barrows ('Michigan Bird Life,' p. 500) lists three specimens taken in the state. I have previously reported the taking of two birds of this species at Huron, Mountain September 26, 1919, and October 3, 1919, ('Auk,' Vol. 37, 1920, p. 135), and Mr. M. J. Magee reports one specimen taken at Sault Ste. Marie in the fall of 1926, ('Auk,' Vol. 44, 1927, p. 116).—STEPHEN S. GREGORY, JR., *Winnetka, Ill.*

A Probable Recurrence of a Partial Albino Pipit (Anthus rubescens) in Winter.—On Feb. 9, 1927 the writer observed a partial albino Pipit in a field near Clemson College, S. C. This bird seemed to have the outer half of each wing pure white, which character rendered it very conspicuous in flight. This bird was observed in the same vicinity on seven different occasions between Feb. 9 and March 18, 1927, and the writer followed it for many hours in hopes of securing it, but without success. It was always observed in a flock of about two or three hundred normal individuals, and the other members of the flock seemed to resent its presence, for they were repeatedly observed to dash after the partial albino, as they wheeled and circled in flight.

On March 9, 1928, more than a year after this bird was first seen, the writer observed in the very same field a specimen which looked to him to be identical with the one mentioned above. This specimen was secured

and examination revealed the fact that the four outer primaries of one wing and five outer primaries of the other wing, were pure white.

It seems rather remarkable to think that this bird which probably nested about three thousand miles from here, should return to the same field to winter for two years in succession; yet it would be even more remarkable for two different individuals with such similar and distinctive markings to occur in the same locality in two successive years.

This specimen is now in the collection of the Division of Entomology and Zoology of Clemson College.—GEORGE E. HUDSON, *Clemson College, S. C.*

Mockingbird at Harrisburg, Pennsylvania.—A dead Mockingbird (*Mimus polyglottos polyglottos*) was found on the street of a thickly settled section of this city on the afternoon of Friday, May 18, 1928. The bird was picked up by a schoolboy and turned over to Professor J. F. Kob of the Harrisburg Schools who in turn brought the specimen to me for examination. While I was very much interested in securing the bird for preparing into a scientific skin, it happened that Professor Kob had promised it to Mr. Boyd P. Rothrock, Curator of the State Museum, Harrisburg. I believe the bird to be a migrant which no doubt killed itself by flying into a wire. Several persons suggested the possibility of the bird being an imported one which was released or escaped from a cage. I am not in accord with this supposition, however, in view of our Game Laws prohibiting the retaining in captivity of any protected bird of the same family as those found in a wild state in this Commonwealth, unless authorized by special permit from the Board of Game Commissioners.—LEO A. LUTTRINGER, JR., *Game Commission, Harrisburg, Pennsylvania.*

Some Wintering Birds for Massachusetts.—The past winter has been mild and open more than the average for this region. When winter failed to materialize in December, a number of birds lingered on. A Great Blue Heron was found beside an open brook on December 25; a Kingfisher on the 26th. An adult Bald Eagle was noted frequently during the second and third weeks of December.

For several winters past one or more Mockingbirds have wintered here, so it was not surprising to find one this year. It had a curious habit of coming to a certain barn to flutter against the windowpane. The owner was convinced the bird had discovered some corn hung inside from the ceiling to dry, but it refused to enter the wide open door. It must have been seeking its own reflection. For a number of days this was kept up, the bird flying well up the pane, only to strike against it and flutter down to the sill.

Every year one or more Duck Hawks linger about the Mt. Tom eyrie until driven out by deep snows or excessively severe weather. This year was no exception and a bird has been there all winter with the possible exception of a few weeks.

Reports of more Evening Grosbeaks have come in this winter than usual. While there has been some fluctuation, most flocks have remained fairly localized. One such, numbering from twelve to seventeen, began to come to a neighbor's yard in late December for the seeds of several box elders. Not a single cluster was left. We suggested feeding with sunflower and other bird seeds. The Grosbeaks promptly found them and have been coming daily all winter. They alternate between feeding on the ground board and roosting in trees about the place. They leave about four o'clock in the afternoon for the night roost, either a large white pine not far off, or else a tall growth of pitch pine half a mile away. Promptly at seven o'clock they are on hand for "first call to breakfast."

In taking the Christmas Census on December 26, 1927, we discovered a Song Sparrow and White-throated Sparrow mingling with a flock of Tree Sparrows. They were feeding on the ground in a tangled brush heap on the banks of Fort River, a small stream running close to Old Hadley. We visited the location again on February 11 and found the Tree Sparrows in the same tangle. It was not until we imitated the songs of both White-throat and Song Sparrow that they came out to show themselves. Neither bird was there on March 14. Have had previous records of both species wintering.

On February 11 in exploring a woodland, dislodged a Winter Wren from a low stone wall edging the road. Appeared oddly out of place amidst the snow. Found it once again on February 22 a quarter of a mile away, this time down among the bare roots of a clump of dead tree stumps. They afford protection from the chill winds and storms, as well as food possibilities among the roots or on the bare ground over which the stumps arch.

I am indebted to Dr. Frederick A. Saunders for what I believe to be our first wintering record of the Myrtle Warbler. Prof. Saunders is spending a sabbatical half year at Mt. Holyoke College. Near the Zoological Laboratory he noticed a Myrtle Warbler one day in early March feeding on privet berries. Students of the Laboratory gave him the description of this bird which they had seen near there earlier in the winter. Altogether he has four different records in the five weeks he has been here. Incidentally, he brought his traps along and during that time has banded 135 Purple Finches, 80 Tree Sparrows, 5 Pine Siskins and 3 Song Sparrows. Four days previous to its capture by Dr. Saunders, one of the Finches was banded by Mr. Thornton Burgess at Springfield. It took the bird, therefore, some four days to traverse the ten or fifteen miles to the north.

Robins winter sparingly in this region every year. Mr. Burlingham Schurr made an interesting discovery at his farm in Granby during the winter of 1925–1926. One would expect to find the birds roosting at night in some dense hemlock or pine clump, well up in the tree. On the night of January 4 Mr. Schurr went out with his flashlight to examine

a trap set for some marauding animal. On kneeling down close beside a spreading ground juniper (*Juniperus communis* var. *depressa*) the rays of his light revealed three Robins roosting side by side in the midst of the juniper. Presently they became alarmed and flew out. On several subsequent occasions he found them, always in the thick junipers close to the ground, viz. January 10, 15, 26, 29; February 3, 8, 11, 13, 18. Their winter diet he noted to be berries of the juniper, cedar and barberry.—AARON C. BAGG, *72 Fairfield Ave., Holyoke, Mass.*

Winter Notes from Southeastern Wisconsin.—*Marila affinis*, LESSER SCAUP DUCK; and *Harelda hyemalis*, OLD SQUAW DUCK.—A sub-zero spell of weather visited southern Wisconsin the second week in December, 1927, after which the following was noted.

In a walk along the Lake Michigan shore north of Port Washington, Wisconsin, a track of some interest was observed in the new fallen snow. It looked like that of a crippled Gull that had some difficulty in flying, and was unable to rise into the air. The wing marks seemed rather short for a Gull, and after following the track for fifty yards, a Lesser Scaup Duck was found hiding under a tuft of dead beach grass. The bird was alive and quite vigorous, but in very poor flesh. Its left foot was encased in a ball of ice almost four inches long and three inches thick. With this heavy impediment it had been unable to fly. Marks along the beach indicated that the bird had been in the vicinity for probably two days, and had once been followed by a fox to the water's edge.

With great care, the ice was removed from the duck's foot. The bird was taken to the Milwaukee Zoo where it lived for eight days.

About a mile beyond where the Scaup was picked up, and on the same day, a tuft of feathers was noticed sticking through the ice of one of the recently formed caves. Upon examining it to see what bird had met its death, the feathers moved and a pair of eyes blinked at me. Here was an Old Squaw Duck completely encased in ice; only the head free. The bird was buried alive in its icy tomb.

An attempt was made to liberate it, but the task was most difficult, for the only instrument at hand suitable for the work was a pocket knife. An hour and a half were spent digging the bird out. A few drops of water and some shreds of meat were forced down its throat in an effort to stimulate life, but the emaciation of the creature together with the shock of its rescue were too much, and it died five hours after being freed.

Strix varia. BARRED OWL; *Bubo virginianus* HORNED OWL, and *Astur atricapillus*, GOSHAWK.

The Milwaukee chapter of the Isaac Walton League has established a thousand acre wild life refuge near the headwaters of the Milwaukee River, fifty-two miles north of the city. On this refuge numbers of Wild Ducks and Pheasants have been raised and liberated. In order to protect this game, it was necessary to set traps for marauding Hawks and Owls. From September 15, 1926 to February 20, 1927, forty Horned Owls were

captured; also eight Barred Owls. From September 20, 1927 to March 1, 1928, forty-two Horned Owls were trapped. Of greater interest than the Owls in this latter period was the capture of six Goshawks, two adult males, one adult female, and three immature. The skins of the adult female and one immature male and female are now in the skin collection of the Milwaukee Public Museum. Almost without exception, these Owls and Hawks were caught either in the act, or after, of killing game on the refuge.

Picoides arcticus. Arctic Three-toed Woodpecker.—A female of this species was flushed from a pile of cut brush in a tamarack swamp at Calhoun, Waukesha Co. Wisconsin, March 25, 1928. It gave a grating catlike call as it flew out, and disappeared in some heavy timber. After listening attentively for four or five minutes, its very distinctive and deliberate pecking was heard on a nearby tamarack. The bird was located on a tree that it had gone over in a most thorough manner. The outer bark had been chipped off completely around the tree from its roots to a height of fifteen feet. Instead of driving straight into the wood as do the Hairy and Downy Woodpeckers, this bird struck glancing blows, chipping off flakes of bark sometimes as large as a silver dollar. Instead of driving with a series of taps followed by a rest as most Woodpeckers do, the Arctic Three-toed puts all his might into each blow, and seemingly must take a rest after the strenuous effort. This results in the slow tapping that is typical enough to be a means of partial identification of this bird before ever seeing him.

I do not know of this bird having been observed in southern Wisconsin within the last twelve or fifteen years.—Clarence J. Jung, *553 Prospect Ave., Milwaukee, Wis.*

Notes from Murray County, Oklahoma.—On December 28–29, 1927, a single Townsend's Solitaire (*Myadestes townsendi*), was observed by the writer at the Devil's Bathtub, Falls Creek, Murry County, Oklahoma. Since there are only three previous records of the occurrence of this species in Oklahoma, this observation is of much interest. Of these former records two are from the Panhandle (R. C. Tate, Dec. 11, 1911, and W. E. Lewis, July 30, 1921) and the third is from the Kiowa Agency, Caddo county (E. Palmer, Mar. 19, 1867 No. 53021 U. S. Natl. Mus.). As Murray county is approximately 350 miles southeast of the east end of the Panhandle and 100 miles southeast of Caddo county, this is a decided extension of the known range of this species in Oklahoma.

The winter status of the Black Vulture (*Coragyps urubu urubu*) and the Turkey Vulture (*Cathartes aura septentrionalis*) in this county is of interest. I found both species to be winter residents, but the Black Vulture outnumbered the latter more than ten to one according to my observations near Falls creek. Heretofore definite winter records for the Turkey Vulture in south central Oklahoma have been lacking.

A single Pileated Woodpecker (*Phloeotomus p. pileatus*) was seen and

heard several times in the bottom lands along the Washita river near the mouth of Falls creek.

Another record worthy of note is that of the Great Horned Owl (*Bubo virginianus virginianus*). This bird was common in the woods bordering Falls creek, several being heard at the same time on the nights of December 27, 28, 29. The call which predominated was the deep, throaty, *whoo, hoo-hoo, hoo.* The broad prairie uplands above the creek afford good hunting for them.—Geo. B. Saunders, Jr., *Oklahoma City, Oklahoma.*

Fuertes' Early Work.—In Dr. Chapman's article on Louis Agassiz Fuertes in the September–October, 1927 issue of 'Bird Lore' he did not list one of the earliest of Fuertes' published colored plates—that of two Chickadees used as a frontispiece to 'On the Birds' Highway'—a little volume of outdoor sketches by the undersigned, published in 1899 by Small, Maynard and Company, Boston. I also have in my possession a little pencil sketch of a Meadowlark made by Fuertes at a meeting of the American Ornithologists' Union at Cambridge in 1896, and given to me by Fuertes who sat next to me and made the sketch while we talked. It shows the unusual ability he had developed at that time. In the painting of the Chickadees above referred to, he used five mediums—pencil, india ink, water color, oil and crayon, getting the most beautiful result. To my way of thinking it was before he had developed the technique of the artist, and before he had studied carefully the pterylosis of birds that he did his best work. His feathers do not show the exact patterns that characterized his later drawings, which tend to make his portraits less like the birds as seen by the eye.—R. Heber Howe, *Belmont, Mass.*

RECENT LITERATURE.

Alexander's 'Birds of the Ocean.'[1]—While many men have described the birds of many lands, Mr. Alexander, is, we believe the first to treat comprehensively of the birds of the ocean.

His aim has been to prepare a "convenient handbook for the identification of the various species of sea birds likely to be met with on ocean voyages in any part of the world." The birds that he includes in the term "sea birds" comprise the Albatrosses, Petrels, Gulls, Terns, Skimmers, Skuas, Auks, Penguins, Frigate Birds, Pelicans, Gannets, Cormorants, Tropic Birds, and Phalaropes, and all species of these groups are described.

This seems to cover the subject most satisfactorily—indeed the only other birds likely to be seen would be certain Ducks and Geese and these would be readily distinguished from any of the other families, while they would be encountered only near the shore.

At the head of each family is an excellent account of the habits and characters of the group as a whole, followed by a list of the species with brief descriptions, measurements, ranges and egg dates, and some pertinent notes on plumages, resemblances to other forms, and field marks. There is also a short key which divides the species into groups by conspicuous color characters.

At the close of the volume are several valuable chapters describing the bird life of the several oceans—North Atlantic, North Pacific, Tropical Seas, Southern Oceans—each divided again into secondary regions the North Atlantic comprising, for instance, the Open ocean, Northern Coasts, Atlantic Coast of the United States, Coasts of southern Europe, Northwest Africa, Mediterranean and Black Seas and the Subtropical Islands. From these "faunal lists" the voyager may know at once what to look for and save himself much time and trouble in running down his species. There is also a systematic list of the 294 species described and a good index. The nomenclature is up to date but commendably conservative in the matter of genera, and subspecies are wisely mentioned only in the notes, with their respective ranges but with no attempt to differentiate them as their characters can rarely be distinguished in the field.

Mr. Alexander is peculiarly well equipped for his task having been a voyager over most of the oceans whose birds he describes, and well trained in his knowledge of sea birds. He is to be congratulated upon producing a most original book—by no means an easy feat in these days—and one that will be a delight to the ornithologist afloat as well as a convenient work of reference when on land or even in the museum.

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[1] Birds of the Ocean. By W. B. Alexander. A Handbook for Voyagers containing descriptions of all the sea birds of the world, with notes on their habits and guides to their identification. With 140 illustrations. G. W. Putman's Sons. New York and London. The Knickerbocker Press, 1928. pp. i–xx, 1–428. Price $3.50.

The book is of small pocket size and is illustrated by 88 excellent plates from photographs by various ornithologists—mainly Americans—and drawings by the author, showing the color patterns of various species in flight.—W. S.

Pleske's 'Birds of the Eurasian Tundra.'—The first publication from the income of the William Brewster Fund of the Boston Society of Natural History,[1] is a voluminous report on the bird life of the Eurasian Tundra by the Russian ornithologist Theodore Pleske.

The work was originally intended to be merely a report on the collections obtained by the Russian Polar Expedition of 1900–03 under the late Baron Edward von Toll. The author, however, realized that so many papers dealing with arctic bird life were written in Russian and were thus unknown to most ornithologists, and that these as well as the rich unpublished material in the Russian Zoological Museum added so much to our knowledge, even to the data contained in such monographs as Schalow's 'Fauna der Arktis,' and decided that a broader treatment covering the entire tundra of Europe and Asia and not merely the region to which the work of the Expedition was restricted, would be preferable.

The result has been a splendid monograph of the birds of arctic Europe and Asia with the results of the Polar Expedition woven into the general account. Part I consists of an outline of the course of the Russian Polar Expedition. In Part II, the systematic report, seventy-one species are considered as belonging to the tundra fauna and are here treated at length while many others are mentioned as casual visitors with the records of their occurrence. Part III lists papers dealing with the birds of each of the twenty-one sections into which the author divides the Eurasian tundra with corresponding lists of the birds recorded from each, each list prefaced with a sketch of the location and physical features of the section. Part IV contains the author's conclusions,

He regards the tundra as a part of the Arctic Alpine Life Zone and denies the necessity of elevating it to the rank of an independent zone as has been done by certain zoogeographers. A thorough analysis of the avifauna of the Eurasian Tundra is presented and comparisons made with the works of Schalow and Palmen. The Holarctic Region is divided into the Atlanto-European Province (including East Greenland), the Sibero-American Province and the North Pacific Province; each with an Alpine (tundra), Subalpine (brush), and Sylvan (forest) zone.

There are seventeen plates from photographs illustrating scenery and nests and eggs of birds, and six plates in color depicting a nest full of young Snowy Owls, the downy young of the Sanderling, eggs of the Curlew Sandpiper and Sanderling, downy young of the Knot, eggs of the Knot and the Turnstone, and *Lagopus rupestris* in mottled autumnal plumage.

[1] Memoirs of the Boston Society of Natural History, Vol. 6, No. 3. Birds of the Eurasian Tundra. By Theodore Pleske. With twenty-three Plates. Boston: Printed for the Society, April, 1928, pp. 111–485, pll. 16–38.

Without a detailed perusal one cannot realize the vast amount of data contained in this notable volume which will long stand as a leading work of reference on arctic bird life. When we consider the amount of labor that the author must have expended in the preparation of the manuscript we must not forget the equally notable service of the editor, Dr. Glover M. Allen, who, we understand, translated the entire manuscript from French into English in preparing it for the press, and to him as well as to the author we owe a debt of gratitude.—W. S.

Whistler's 'Popular Handbook of Indian Birds.'[1]—As the author of this excellent work truly says, the books on Indian birds are either too scientific, too expensive or too elementary, and his object has been to provide a dignified treatise, giving all the information desired by the student or traveller, but not in too scientific a manner and at a price within reach of all. That he has succeeded admirably we think everyone will agree.

Matters of distribution, migration, and nomenclature are explained in a lucid manner in the introduction and following this the birds are considered in systematic sequence beginning with the Passeres. There is a brief description, a paragraph on field identification, another on distribution—in which the various subspecies occurring in India are distinguished, and finally an account of habits, etc.

Seventeen halftone plates from paintings by Grönvold (four in color) depict the most striking species while text cuts of heads or entire birds illustrate additional forms. The author's sketches of the habits of the various species are particularly interesting and show his familiarity with his subject as well as with the literature of ornithology. Many Indian birds belong to groups entirely unknown in America or else have habits utterly unlike those of our species which makes the book interesting reading for those desiring to broaden their knowledge of bird life.

Of the Palm Swift, a bird distantly related to our Chimney Swift, Mr. Whistler says: "It may be said to be parasitic on the fan-palm, and is only found in the areas where that tree grows. The nest is built on the leaves and the birds spend their lives hawking for insects in the vicinity. They sometimes cluster together on the leaves and move up and down the fronds with a shuffling mode of progression. Colonies of bats are found in similar situations and a single tree may contain a colony of both bird and mammal." As in many of the other sketches a vast amount of information is presented for which one would have to search widely through ornithological literature.

Mr. Whistler has placed us under obligations by furnishing a most valuable work of reference and a book that will be of the greatest service to ornithologists visiting India as well as to local students.—W. S.

[1] Popular Handbook of Indian Birds. By Hugh Whistler, F. L. S., F. Z. S., late Indian (Imperial) Police. Gurney and Jackson, London: 33 Paternoster Row, E. C. Edinburgh: Tweeddale Court, 1928, pp. i–xv, 1–438, pll. 1–17, figg. 1–85. Price 15 shillings net.

The Cornell Ornithological Laboratory Notebook.[1]—Various blank forms and notebooks have appeared from time to time for the recording of observations on birds but the present book prepared by Prof. Arthur A. Allen, the late Louis Agassiz Fuertes and M. D. Pernie all of the department of ornithology at Cornell University is the best we have seen.

The bulk of the volume consists of sheets in a loose leaf binder, bearing outline sketches of the birds of central New York, one to the page, and on opposite pages maps upon which the summer and winter ranges of the species may be charted, while the outline figures may be colored with crayons. Data on various subjects, nest, eggs, migration, song, etc. may also be entered in spaces provided for them.

The introductory pages contain diagrams of feather arrangement and structure; skeleton; a key to North American families with outline heads and feet; a key to birds' nests with many half-tone illustrations; and a list of the birds of central New York with character and time of occurrence.

The data are to be obtained from field and laboratory study and entered in their proper place thus emphasizing the facts concerning each species, while the coloring of outline figures impresses the color pattern of each bird as can be done in no other way.

We heartily commend the notebook to every institution where ornithology is taught and to beginners who desire to obtain a serious knowledge of the subject, especially when no preceptor is available.—W. S.

Fifty Spring Birds of Eastern North America.—The second set of bird cards prepared by the National Association of Audubon Societies is before us and carries on the excellent idea initiated with the set of fifty winter birds noticed in the January 'Auk'. All that we said in praise of the first set applies to this second offering which is evidently intended to cover only the early spring birds although this is not emphasized in the title. The bulk of the Warblers, the Tanager, Rosebreast and Flycatchers, which are perhaps even more characteristic of spring than those included, are evidently reserved for a future set.

Major Brooks has in the majority of cases portrayed the birds in characteristic poses and the color reproduction is usually excellent, although the difference between the two races of Palm Warbler is entirely lost and the Louisiana Water-Thrush is too much of an olive.

This set, we are informed, has been prepared under the direction of Dr. F. M. Chapman while the text is by Alden H. Hadley. We congratulate the Association upon the continuance of this most important educational project and take this opportunity of correcting an error in our former review in which we stated that the Pine Siskin had been omitted failing to note that it was included on the card with the Redpoll.

Everyone interested in birds or desiring to interest others should have

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[1] General Ornithology Laboratory Notebook. In Looseleaf Flexible Cover 8½ x 11 inches. The Comstock Publishing Co., Ithaca, N. Y. Price $4.00.

these sets of bird cards which the National Association of Audubon Societies[1] has placed within the reach of all.—W. S.

Abel Chapman's 'Retrospect.' —The veteran hunter-naturalist, Mr. Abel Chapman, has recently published his tenth volume[2] dealing with his hunting experiences in various parts of the world, embracing, he tells us, no less than sixty overseas expeditions. And since he mentions shooting his first Sanderling in 1868 it is not difficult to estimate the long period that these experiences have covered.

The present book is a miscellaneous collection of essays dealing with a variety of subjects, birds, fish, big game, etc, and through them all the author indulges in discussion of various problems which have interested him during his long and active life.

He still maintains that the Godwit and the Gulls require from three to four years to acquire fully adult plumage and that the color of a feather may change without molt, even if the microscopists have shown that the ducts through which the coloring matter reaches the outer webs of the feather cease to function as soon as the feather is full grown. His contention is if the ducts do cease to function then the color must be transmitted by "some other method as yet unknown." That such changes do occur he says is self evident. This argument is, however, far from convincing.

With regard to protective coloration we are in entire accord with Mr. Chapman's contention that in the vast majority of cases, if not all, it is not proven. The mere conformity of the coloration of an animal to that of its environment does not prove that it is for purposes of protection and as he shows many desert animals supposed to be protectively colored are nocturnal and live in burrows during the day.

We are also in accord with much that he says about the uselessness of too exacting game laws and his contention that sanctuaries are more effective in saving wild life than legislation. The artificial propagation of game necessarily requires the extermination of all species detrimental to game and this as well as (in his estimation) the development of "grouse disease" is the price we pay for "maintaining a stock of game at a higher level than Nature designed." Here comes up the old contention of "To whom does our wild life belong?"

Mr. Chapman's bird chapters are: The Moors in Winter; Sixty Years Wildfowling Afloat; Flight; Flamingoes; and Spanish Memories, though bird matter is scattered through the other chapters as well.

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[1] Audubon Bird Cards. Set No. 2. 50 Spring Birds of Eastern North America. From Color Drawings by Allan Brooks. Published by the National Association of Audubon Societies, 1974 Broadway, New York City. Sold in Sets. Price $1.00.

[2] Retrospect. Reminiscences and Impressions of a Hunter-Naturalist in three Continents. 1851–1928. By Abel Chapman. Gurney and Jackson, London: Paternoster Row. Edinburgh: Tweeddale Court. 1928, pp. i–xix + 1–353. Price 25 shillings net.

The book is profusely illustrated with drawings by W. H. Riddell, Joseph Crawhall and the author. Twenty of Mr. Riddell's plates are in color and are beautifully and delicately drawn representing a nesting colony of Flamingoes, Grebes, Vultures and various groups of African game animals. Equally noteworthy are Mr. Chapman's sketches of various birds on the wing, notably Vultures and Ducks.

The volume is a worthy successor of the author's other works and will furnish most interesting reading both to the naturalist and the sportsman, very few of whom have had such a wide and varied experience.—W. S.

Gross on the Heath Hen.—Dr. A. O. Gross who has for some years past been carrying on investigations on the status of the Heath Hen under the fund established to prevent its extermination, has now prepared what we fear, in the light of the latest information, may prove to be the obituary notice of the bird.

The paper[1] is published by the Boston Society of Natural History with the aid of the William Brewster Fund and has as a frontispiece a beautiful plate in colors from a painting of the Heath Hen by the late Louis Agassiz Fuertes.

Dr. Gross presents first an historical resume of the species, giving its early history, and an outline of its decrease and increase, and the efforts that have been made to preserve it. In 1890 it numbered less than 200 individuals on the island of Martha's Vineyard, having long since disappeared from the Pocono Mountains in Pennsylvania, the Pine Barrens of New Jersey and Long Island, which had been its last strongholds elsewhere. By 1907 there were estimated to be less than 50 and then every effort was made to increase the number with the result that by April, 1916, they were estimated at 2000 individuals. The next month fire swept over their range on the island and they were nearly wiped out but by 1920 had increased again to over 500, since which time the decrease has been steady.

The various possible causes of decrease are then discussed by Dr. Gross—disease, parasites, cats, hawks, fire, sterility, etc, and his detailed study of the birds from the fire tower on the island is presented.

The food of the bird is considered in detail; there is a list of specimens preserved in museums—208 in all; full descriptions of the various plumages and of the anatomy of the bird and a bibliography. Various illustrations from photographs show the bird's habitat, and old and young in different poses, as well as anatomical preparations. Dr. Gross has prepared an admirable monograph for which all ornithologists are indebted.

In discussing the nomenclature of the bird he concludes, we think rightly, that the Heath Hen and the Prairie Chicken are merely subspecies and that the former should bear the name *Tympanuchus cupido*

[1] The Heath Hen. By Alfred O. Gross, Ph.D. (Bowdoin College, Brunswick, Maine). With twelve plates. Memoirs of the Boston Society of Natural History, Vol. 6, No. 4. Boston May, 1928, pp. 491–588.

cupido and the latter *T. c. americanus*. While it is by no means certain that Reichenbach's name *americanus* applies to the Prairie Chicken and not to the Heath Hen, he thinks it best not to overturn customary usage. In Dr. Gross's bibliography we note the omission of an anonymous account of the bird in the New Jersey Pine Barrens and its wanton destruction there by unscrupulous gunners (Doughty's Cabinet of Natural History, Vol. II, 1832, p. 16, dated January 4, 1832 and signed I.) Also the author listed as "Herbert L. Goggins" in the bibliography should be Herbert L. Coggins, former secretary of the Delaware Valley Ornithological Club and former president of the Cooper Club.—W. S.

Collett's 'The Heart of a Bird.'[1]—This little volume consists of a series of twelve sketches of bird life in England, covering the twelve months of the year, and written by Anthony Collett, who has been termed "one of the most sensitive and discerning of out door observers of nature." Most of the sketches have appeared previously in the London 'Times' and are now gathered together in book form with an introduction covering the general structure and activities of birds, which for terseness of expression and clearness and originality has seldom been equalled. "Birds," says Mr. Collett, "are flying things full of eagerness and mobility. Their hearts beat more swiftly than those of mammals, their blood is hotter, they overflow with the self expression of song," and again speaking of flight he says: "Of nature's three attempts to make vertebrates fly, birds have been by far the most successful * * * pterodactyls were dreary-looking beasts, unless the naturalists who reconstruct them from their stray bones do them injustice; they flew feebly and it is very unlikely that they sang."

Each of the monthly chapters treats of observations on birds in some part of England with descriptions of characteristic climate and scenery; while there are discussions on migration, song, feeding habits, etc. and the pages teem with original observations giving us some of the most vivid pictures of British bird life that we have read, as well as food for thought on many problems of bird activity—W. S.

Gorges' Life of Ernest Harold Baynes.[2]—The many who have listened to the lectures of the late Ernest Harold Baynes and especially those who have enjoyed the privilege of his acquaintance will be deeply interested in Mr. Gorges' sympathetic biography. Here is told the story of his early life, his athletic prowess, and his overpowering love of birds and animals which led him to the field of literature and to the lecture platform. Those who knew him only as the champion of bird life and

[1] The Heart of a Bird. By Anthony Collett. London, Nesbit & Co. Ltd., pp. 1–287. Price 10sh. 6p.

[2] Ernest Harold Baynes. Naturalist and Crusader. By Raymond Gorges. Boston and New York, Houghton Mifflin Co., The Riverside Press. Cambridge, 1928, pp. 1–256. Price $4.00.

the organizer of the bird sanctuary and the bird masque, will read with interest of his work in behalf of the buffalo, his strenuous opposition to nature faking and his able campaign in behalf of vivisection and his exposures of the deception of its opponents. The book is well written, handsomely gotten up and illustrated with a number of excellent halftones.—W. S.

Baxter and Rintoul on Distribution of Scottish Birds.[1]—This handsomely printed work is a sort of glorified faunal list. A full page is devoted to each species or subspecies, headed by a general statement such as: "A rare Visitor," to quote a simple case, or "An abundant Resident in wooded districts. A Winter Visitant from the Continent and a Passage Migrant," in the case of a bird of more complicated occurrence, like the Chaffinch. Then in heavy type come names of the fourteen geographical areas into which the authors have divided Scotland and under each the names of the counties or parts of counties which they include in the area, these being printed exactly alike on every page, Then there are symbols placed after each county from which the bird has been recorded indicating the character of its occurrence: viz. "R." is resident, "O." occasional visitor, etc. The scheme is convenient as it provides a place for entering the future occurrence of any bird in any county or district of Scotland, but rather expensive since it sometimes happens that an entire page is devoted to the fact that a species has once been recorded from Aberdeen.

There are several appendices of additions and corrections, and lists of unaccepted records and introduced species, while a map of Scotland showing the various geographical areas forms a frontispiece.

The book has apparently been compiled with great care and the authors, already well known for their intensive studies of the Scottish avifauna, are to be congratulated upon an excellent and painstaking work placing Scotland ahead, perhaps, of any other country in the matter of a detailed and graphic record of its avifauna.—W. S.

Some Birds of Dar es Salaam.[2]—This little brochure consists of random notes on birds observed during a residence at Dar es Salaam, on the east coast of Africa, in Tanganyika Territory, by the granddaughter of J. H. Gurney the noted British ornithologist. They vary in length some presenting many items of interest on the life history of the species others mere notes on appearance or dates of observation. A supple-

[1] The Geographical Distribution and Status of Birds in Scotland. By Evelyn V. Baxter and Leonora Jeffrey Rintoul. Oliver and Boyd, Edinburgh: Tweeddale Court, London: 33 Paternoster Row E. C. 4, 1928, pp. i–viii + 1–425. Price 15sh. net.

[2] Notes on Some Birds of Dar es Salaam. By Cecily J. Ruggles-Brise, M. B. E., F. R. G. S., F. Z. S. With 29 illustrations. Norwich., Jarroid & Sons Ltd., pp. i–xvii, 1–96. Price 4sh. 6 pence, net.

mentary chapter discusses migration at Dar es Salaam as compared with that observed in England, Several halftones from photographs and a number of crude pen and ink sketches illustrate the little book. —W. S.

The Tentative List of Chinese Birds.[1]—The second part of this important publication has recently appeared and covers the Passerine species completing the list which numbers 1025 species and 440 additional subspecies.

In general style this part follows closely that of Part I but insomuch as the authors have had the valuable assistance and advice of Dr. Nagomichi Kuroda, who practices a greater subdivision of genera than does Dr. Hartert, whose work was followed in preparing the former part, they state that generic division has been carried farther in the part now before us than in its predecessor.

The bird listed on p. 141 of part I as *Dryobates kizuki seebohmi* Hargitt is described as *Yungipicus kizuki wilderi* by Dr. Kuroda on an unnumbered page inserted in Part II, but the original publication seems to have been in 'The China Journal,' 1926, p. 261. The authors of the 'Tentative List' have furnished a very useful work of reference for those interested in the study of Chinese birds.—W. S.

Recent Papers by Kuroda.[2]—Dr. Nagamichi Kuroda has recently published a report on the birds of Mutsu Bay, Japan as part of the biological survey of the Bay which is being carried on. Each of the thirty-five species is described in detail with some account of its habits and keys to the species of the several genera, The report is illustrated by a number of reproductions of photographs of scenery, mounted birds, and birds from life. Another pamphlet on the protection of birds in Japan[3] has been prepared by Dr. Kuroda for presentation at the meeting of the international Committee on Birds Protection at Geneva. It is fully illustrated with photographic reproductions of Japanese birds that are in need of protection while the text reviews what the government has done in the matter of conservation and the difficulties in the way of ensuring protection. Dr. Kuroda points out that by specifying certain birds as "natural monuments" covered by the protective law, the attention of unscrupulous hunters and dealers is at once attracted to them and every effort is made to secure as many as possible.—W. S.

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[1] A Tentative List of Chinese Birds. Part II. Passeriformes. Compiled by N. Gist Gee, Lacy I. Moffett and G. D. Wilder. Bull. No. 1, Parts 2 and 3 of the Peking Soc. Nat. Hist. Founded 1925. 1926–27, pp. IX–X, bis. + 145–354.

[2] Birds of Mutsu Bay. By Nagamichi Kuroda. Science Reports of the Tohoku Imperial University, Fourth Series, Biology. Sendai, Japan. Vol. III, No. 3, Fasc. 1. March, 1928, pp. 299–359, pll. V–XIII.

[3] The Protection of Birds in Japan. By Nagamichi Kuroda. With 10 plates. Published by the Author. Tokyo, 1928, pp. 1–19.

The Gallinaceous Birds and Pigeons of Annam.[1]—Messrs. Delacour and Jabouille, well known for their researches in French Indo- China have published a detailed account of the 23 Pheasant-like birds and the 16 pigeons found in Annam, There are keys to the species of each group and then under each species are given descriptions of the male, female, young and eggs, distribution and observations on habits. There are seven plates in colors from paintings by Mr. Delacour and one in black and white from a drawing by Grönvold.

The authors' wide field experience in the region of which they write gives to their work a particular authority.—W. S.

Murphy on Antarctic Birds.[2]—Dr. Robert Cushman Murphy in an interesting discussion of antarctic zoogeography and its problems has much to say of birds. The antarctic land birds are few in number and usually of obvious affinities. Of the more numerous water birds only three are regarded as exclusively antarctic—the Antarctic Skua and the Adele and Emperor Penguins. Other groups are mentioned, the species of which range to subantarctic islands or farther north along cold water channels. Dr. Murphy emphasizes the fact that like all cold ocean faunae antarctic bird life is poor in species but rich in individuals and also stresses the need of more museum material before we can reach a thorough understanding of its distribution and make deductions upon general problems of antarctic life.

He also discusses the fossil Penguins of Seymore Island, west Antarctica, and endorses the speculations of Wiman that the present day Penguins are descended from a race of terrestrial birds inhabiting the antarctic coasts during the period of mild climate which is indicated by the fossil vegetation, and that they took to the sea and became adapted to a marine life as glaciation of the Antarctic gradually advanced.—W. S.

The Wheaton Club on Ohio Birds.—The Wheaton Club, an organization of ornithologists formed at the Ohio State University in December, 1921, has presented 17 papers on Ohio birds which are published together and represent the results of field work carried on during the years 1922 to 1927.[3]

A note on the Club by Robert M. Geist, its secretary, contains a number

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[1] Les Gallinacés et Pigeons de l'Annam. Par J. Delacour et P. Jabouille. Paris. Société d'Editions, Géographiques, Maritimes et Coloniales. Ancienne Maison Challamel fondée en 1839 Boulevard St. Germain, 184 (VIe) 1927, pp. 369–461. Price 40 francs.

[2] Antarctic Zoögeography and Some of its Problems. By Robert Cushman Murphy. Reprinted from Problems of Polar Research. Amer. Geogr. Soc. Special Publ. No. 7, 1928, pp. 355–379.

[3] Short Papers on Ohio Birds Contributed by Various Members of the Wheaton Club and Based on Field Work during the Years 1922 to 1927. Edited by the Museum Staff. Ohio State Museum Science Bulletin Vol. 1, No. 1. April 1, 1928, Columbus, pp. 1–79 eight half-tone illustrations and a map. Price $1.00.

of important records of unusual birds seen or collected. Then follow papers under the following titles:

The Seasons of Birds in Central Ohio; The Winter Birds of Central Ohio; Nesting of the Black Vulture in Hocking County; A Champaign County Heronry; Notes on Ohio Shore Birds; Henslow's Sparrow in Ohio; Recent Records of the American Egret and Little Blue Heron in Ohio; A Sharp-shinned Hawk's Nest; Notes on the Breeding Warblers of Central Ohio; The Birds of an Ohio Cranberry Bog; Snowy Owl Invasion; on the Starling; Chickadees; Birdbanding; a Long-eared Owls' nest; and Ducks feeding on gizzard shad.

The Club is to be congratulated upon a valuable contribution to Ohio ornithology and to the life histories of a number of species. The experience with the Henslow's Sparrow is very similar to that of the Delaware Valley Club with the bird in southern New Jersey (cf. S. N. Rhoads, Cassinia, 1902, p. 6).—W. S.

Sutton on the Birds of Pymatuning Swamp and Conneaut Lake, Pa.[1]—In this paper Mr. Sutton presents probably the most exhaustive treatment of the bird life of a limited area that has been prepared for any part of Pennsylvania unless it be Mr. Todd's 'Birds of Presque Isle.' The region of which he treats is one of the wildest that is left in the western part of the commonwealth and although the bird life has suffered in recent years, there are many unusual species still breeding there.

The faunal status of the region, at the present time, is particularly interesting because of the mixture of species from several zones. Thus as Mr. Sutton says "the Northern Water-Thrush, Wilson's Thrush and Tufted Titmouse may be found nesting in the same wet woodland, or the Wilson's Snipe, Swamp Sparrow and Cardinal may occur side by side at the margin of the marsh."

He considers that the Carolinian element is pushing northward and the Canadian disappearing, an exactly similar process to what is occurring in certain eastern parts of the state. Mr. Sutton states that the notes contained in this paper are believed to be the first full accounts of the breeding of certain species in the state but he will find notes on several, at least, of those mentioned in various numbers of 'Cassinia,' the Proceedings of the Delaware Valley Ornithological Club, notably the account of the Northern Water-Thrush in the Poconos by Weygandt and of the Florida Gallinule in the Delaware River marshes by Miller.

Mr. Sutton has added to his own observations and those of his associates, migration data recorded at Meadville, a few miles to the eastward, and all published information on the bird life of the general region, which adds greatly to the value of the report. The accounts are well written and

[1] The Birds of Pymatuning Swamp and Conneaut Lake, Crawford County, Pennsylvania. By George Miksch Sutton. Reprinted from Annals of the Carnegie Museum [Pittsburgh], Vol. XVIII, 1928, pp. 19–239. Plates II–XI. March 31 1928.

full of detail and make interesting reading. The illustrations consist of half-tones from photographs of scenery and nests, with a frontispiece of the Pileated Woodpecker from a painting by the author.

The Carnegie Museum of Pittsburgh made possible the exploration of the swamp and the report is published in its 'Annals.' We cannot too strongly urge upon similar institutions the publication of such reports upon the local fauna before it is too late to study it in its normal condition.

Mr. Sutton is to be congratulated upon an excellent piece of work which will preserve for future generations an accurate picture of what the bird life of the Pymatuning Swamp was like, years after present conditions shall have passed away.—W. S.

Devincenzi's 'Birds of Uruguay.'[1]—The second installment of this paper covers the Charadriiformes and is thoroughly up to date in method of treatment, nomenclature and synonymy. Little pen and ink sketches of the species are reproduced and scattered through the text, while there are excellent outline drawings of the feet and bill of the various species. The author is to be congratulated upon one of the best articles on the birds of South America that has appeared from the native press.—W. S.

Jackson on Birds of Door Peninsula, Wisc.[2]—Dr. Jackson in this paper presents a list of birds observed during July, 1917, on the Door Peninsula which extends for sixty miles into Lake Michigan on the eastern side of Wisconsin, and the islands adjacent thereto. The region is mainly Canadian with a tinge of Transition. Eighty-four apparently breeding species are listed with field notes. Among these the most important seems to be the Pipit three pairs of which were found on Washington Island at the head of the peninsula and a specimen collected on July 19 which had evidently bred.

In his preliminary remarks on the zoology and botany of the state Dr. Jackson states that "the terrestrial vertebrate fauna of Wisconsin is probably as little known as that of any state east of the Missouri and north of the Ohio and Potomac Rivers," most investigations having been confined to local areas in the southern countries. The importance of this excellent list therefore becomes at once apparent.—W. S.

Sushkin on Palaearctic Birds.[3]—This, the second series of notes on various Palaearctic birds published by Dr. Sushkin, embodies the results of his studies of material in various museums, and is devoted entirely to

[1] Aves del Uruguay II. Charadriiformes. By Garibaldi J. Devincenzi. Anales del Museo de Historia Natural de Montevideo. Serie II, Tomo II, Entrega III, 1927 pp. 215–264.

[2] Notes on the Summer Birds of Door Peninsula, Wisconsin, and Adjacent Islands. By Hartley H. T. Jackson. Reprinted from the Transactions of the Wisconsin Academy of Sciences Arts and Letters, Vol. XXIII. January, 1928, pp. 639–665, pll. 20–22.

[3] Notes on Systematics and Distribution of Certain Palaearctic Birds: Second Contribution. By Peter P. Sushkin. Proc. Boston Soc. Nat. Hist., Vol. 39, No. 1, pp. 1–32, pll. 1–3.

a consideration of the Goshawks (*Astur gentilis*) of which eleven Palaearctic races are recognized, *A. g. moscoviae* (p. 8) from Russia being described as new.

The author's studies indicate two fairly distinct groups of these birds a northern and southern with two races that are somewhat intermediate. He considers that the Goshawks originated in the western Palaearctic region and broke up into the two series of races as they spread eastward. He also points out that there is a white or whitish dimorphic form in two of the subspecies. Three excellent plates from photographs of skins show the differences between the various forms.—W. S.

Todd on New Formicariidae and Conopophagidae.[1]—Having completed his study of the series of Gnateaters and Antbirds in the collection of the Carnegie Museum Mr. Todd in this paper describes a large number of hitherto unnamed forms.

The Formicariidae alone in the collection brought together at Pittsburgh comprises 9098 skins, representing 221 species and 124 additional subspecies referred to 53 genera so that the author is admirably equipped to speak with authority upon the group.

Thirty-nine new forms are described and three new genera proposed—*Schistocichla* (p. 165) for *Percnostola leucostigma* von Pelz., *Myrmedestes* (p. 172) for *Turdus ferrugineus* Müller and *Myrmophylax* (p. 172) for *Formicarius atrothorax* Bodd. There is also a useful review of the genus *Myrmeciza* and its allies (*Sclateria, Schistocichla, Myrmelastes, Myrmeciza, Myrmoderus, Myrmedestes* and *Myrmophylax*) which constitutes an entirely new arrangement from that proposed in Dr. Hellmayr's recent monograph. Only two forms of Gnateaters are described, *Conopophaga aurita australis* (p. 150) Brazil, and *Corythopis torquata subtorquata* (p. 151) Bolivia.

Mr. Todd has performed a real service to ornithology by his careful studies of the Formicariidae and has straightened out many a puzzling problem. The two main obstacles to the study of the Antbirds seem to have been (1) an uncertainty as to which forms the names of the older writers pertained, which was largely settled by Dr. Hellmayr's studies of the types in the European museums, and (2) the attempts of later writers to refer many perfectly distinct forms to a comparatively small number of described species. With the painstaking work of Dr. Hellmayr and Mr. Todd we are now in a position to proceed intelligently with the study of this difficult family.—W. S.

Van Oordt on the Relation between Gonads and Plumage.[2]—Shorebirds which summer far south of their breeding grounds have always

[1] New Gnateaters and Antbirds from Tropical America, with a Revision of the Genus Myrmeciza and its Allies. By W. E. Clyde Todd. Proc. Biol. Soc. Washington, Vol. 40, pp. 149–173, December 2, 1927.

[2] Studies on the Gonads of Summering Birds. I and II. The Knot and the Turnstone. By G. J. Van Oordt. Tijdschrift der Ned. Dierkundige Vereeniging. Ser. 3, Deel 1, Afl. 1. 1928, pp. 25–30.

been a puzzle both to students of migration and of sequence of plumages (cf. review of Abel Chapman's 'The Borders and Beyond,' Auk 1925, p. 151).

Endless theory has been indulged in to account for the presence of these birds and their erratic plumage but Mr. Van Oordt has gone further and given us some definite facts which go far to clear up the matter.

A series of summering specimens of Knot and Turnstone from the mudflats and sandbanks of northern Holland, where many Limicolae remain all summer but do not breed, was collected and their genital organs studied. As the males largely predominated they alone were considered and it was found that in the majority of specimens spermatogenesis had not taken place and that the plumage of such birds was practically identical with that of winter, while in specimens which showed more or less of the nuptial plumage there had been a partial development of spermatocytes. The author's inference seems obvious that "the full summer plumage cannot develop unless spermatogenesis has started." He states that his attention had been called to the fact that "the development of the plumage of the birds investigated took place earlier than the time at which they were collected and it might have grown under the influence of gonads having a different histological structure." It seems to us that the point is that all individuals assumed the winter plumage at the end of the previous summer and those individuals in which spermatogenesis failed to take place did not molt, while those in which it was arrested after starting developed only a part of the prenuptial molt. In the same way it would seem obvious that the impulse for the northward migration also failed to develop and left these sexually inactive birds scattered along the way, as has been suggested and demonstrated by other authors. Why they should start to migrate at all is rather curious although this might be due to the flocking instinct which keeps them together through the winter or to a slight development of the migratory urge. Mr. Van Oordt has made a valuable contribution to a most interesting problem. —W. S.

Recent Papers on Quail Preservation.[1]—The Conservation Department of Maryland has issued an excellent pamphlet by E. Lee LeCompte on Winter Feeding and Propagation of the Bob White with reports on the success of winter feeding in various other states. The section devoted to propagation with photographs of the ranks of incubation boxes in which the eggs laid by the Bob Whites are set under Bantam hens, and the laying and brooding pens, explain this recent activity in keeping up the supply of game birds in an interesting way.

Dr. Joseph Grinnell has an important contribution to the problem of

[1] Winter Feeding of Bob-White Quail. Propagation of Bob-White Quail. Song and Insectivorous Birds. By E. Lee LeCompte State Game Warden of Maryland. pp. 1–14, 1–13, 1–8. 1928. A Critical Factor in the Existence of Southwestern Game Birds. By Joseph Grinnell. Science, May 27, 1927, pp. 528–529.

preserving the California Quail which is disappearing in spite of all efforts made in its behalf.

After showing that conditions of food and shelter have not changed and that natural enemies such as predacious Hawks, foxes, etc., have decreased equally as fast as the Quail, if not more so, he seeks for some other cause and we think has found it in the increasing lack of available water. Young Quail in the downy stage must have water within walking distance which Dr. Grinnell estimates as within 400 yards, and when every possible source of water is being piped to irrigate thirsty ranches and even seepage is being caught by underground pipes scarcely a drop is left available for the little birds which probably die at an early age. As Dr. Grinnell says "water supply available in the dry season is a factor delimiting not only human but certain other vertebrate populations in the arid southwest" and if the humans are going to take it all the Quail and probably other species would seem to be doomed.—W. S.

An Outline of Bird Study.[1]—The General Biological Supply House of Chicago is issuing a series of scientific pamphlets "each of which is prepared by a scientist whose training lies in the special field presented." One of these recently issued is entitled 'An Outline of Bird Study,' and is by C. Blair Coursen. It consists of brief accounts of the principal activities of the bird student with a series of questions or "study suggestions" following each, and in an appendix a list of books, periodicals, ornithological associations and bird study material with addresses where information may be obtained.

The chapter headings are: The Value of Bird Study—covering economic ornithology; How to Study Birds—field study, recording data etc; Birds in Nature—distribution, migration and nesting; Birds in the Class Room—classification, structure and molts; Activities for the Individual Bird Student—bird houses, feeding and photography; Activities for the Bird Class—winter feeding, sanctuaries and bird banding.

The pamphlet seems to be an admirable introduction to the study of birds and should be especially useful to beginners who have no one at hand to help them.—W. S.

Recent Papers by Dr. Chapin.[2]—Dr. Chapin has presented a popular account of his late expedition to Uganda, central Africa, in 'Natural History' which is exceedingly interesting reading.

Of a more technical character is his review[3] of the African Cookoos of the genus *Cercococcyx*, in which is described a new species from Ruenzori

[1] An Outline of Bird Study. By C. Blair Coursen, 1928. General Biological Supply House, Chicago, Ill., pp. 1–47, numerous illustrations. Price $1.00, $10.00 per dozen.

[2] Ruenzori from the West. By James P. Chapin. Natural History, XXVII, No. 6, pp. 615–627.

[3] The African Cuckoos of the Genus *Cercococcyx*. By James P. Chapin. Amer. Mus. Novitates No. 313. May 16, 1928, pp. 1–11.

C. montanus (p. 6) and a description[1] of a new Waxbill, *Estrilda nigriloris* (p. 1) from the Belgian Congo.—W. S.

Lowe on the Phylogeny of the Ostrich.[2]—In this paper Dr. Lowe presents the results of his extensive studies of the Struthious birds including the structure of their feathers, bony skeleton, muscles etc. as well as a consideration of the distribution of the group both in time and space.

Without considering his points in detail we may state briefly the author's conclusions which are that instead of having degenerated from a flying ancestor the Ostrich-like birds represent a perfectly natural group descended from some common ancestor which left the main avian stem before flight had been attained and that any degeneration or specialization that has taken place in the Ostrich forelimb has been degeneration from a primitive non-volant sauropsidan forelimb and not from a volant-carinate wing. He considers that the characters which constitute the general make up of the Struthiones are almost invariably primitive and indicate an early phase in the evolution of the true bird and to regard them as degenerate or retrogressive is not justified by the evidence; also that the plumage of adult Struthiones is prepennal down and has not reached a more advanced stage than that of the downy chick of the common fowl.

The *Archaeopteryx* he considers left the avian stem at an earlier (more reptilian) stage than did the Struthiones, while the Tinamous diverged at a very much later epoch. Instead of considering, as some have done, that the several groups of Ostrich-like birds—Emus, Rheas, Kiwis, etc., left the main avian line at successive periods Mr. Lowe thinks they all descended from a common ancestor and would regard them as forming a subclass sharply differentiated from all other birds.

Mr. Lowe's paper is one of extreme interest and his conclusions seem to be entirely warranted by the evidence which he produces.—W. S.

Annotationes Ornithologiae Orientalis.[3]—Under the above title Mr. Toku T. Momiyama has issued the first number of a journal to be devoted to ornithology of the far east (pp. 1–141). The papers in this issue are all by Mr. Momiyama and consist of "Some New and Unrecorded Birds from Japanese Territories, I.," "On *Cynchramus yessoensis*" and "Systematic Lists of the Birds of Quelpart Island." While the articles are mainly in Japanese the 25 new forms described in the first paper are reprinted in English.—W. S.

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[1] A New Species of Waxbill (*Estrilda*) from the Southeastern Congo. ibid. No. 308, April 24, 1928, pp. 1–3.

[2] Studies and Observations Bearing on the Phylogeny of the Ostrich and its Allies. By Percy Roycroft Lowe. Proc. Zool. Soc. London, 1928 (April 16), pp. 185–247.

[3] In aedibus Athenaei Ornithologici Momiyamici 1146 Sasazka, Yoyohata-mati, Suburb, Tokyo. Dec. 27, 1927.

Riley on New Bornean Birds.[1]—Mr. Riley has studied the material obtained by Mr. H. C. Raven in the islands near Borneo in 1913 and as a result proposes as new *Dinopium raveni* (p. 139) from Pulo Eraban and four subspecies of the genera *Yungipicus*, *Collocalia* and *Chalcostetha*.—W. S.

Griscom on New Birds from Mexico and Panama.[2]—Studying the 800 specimens obtained by Mr. Rex R. Benson on the Caribbean slope of western Panama, which have been acquired by the American Museum of Natural History, Mr. Griscom describes as new *Eupsittula astec extima* (p. 2) Almirante, *Chalybura urochrysa incognita* (p. 3) Tacarcuna, *Chloronerpes simplex aurorae* (p. 3) Almirante and *Hylopezus fulviventris flammulatus* (p. 4) Almirante. He also lists 23 species and subspecies not hitherto recorded from Panama, including a breeding colony of the Tropic Bird (*Phaethon aethereus*) not before known from the Atlantic coast.

Mr. Griscom also describes from Mexico three new races: *Nannorchilus leucogaster grisescens* (p. 4) San Louis Potosi, *Carpodacus mexicanus potosinus* (p. 5) San Louis Potosi and *C. m. nigrescens* (p. 5) Tamaulipas.—W. S.

Wetmore on Fossil Birds from Nebraska and Cuba.[3]—Two collections of fossil birds received by the American Museum of Natural History have been studied by Dr. Wetmore. The first from the upper Tertiary of Nebraska contained *Geranoaëtus contortus*, *Megalornis pratensis* and an undetermined species of *Aramus*. The second from the Ciego Montero deposit of Cuba consisted of *Casmerodius albus*, *Ixobrychus exilis*, *Jabiru mycteria*, *Anas platyrhyncha*, *Geranoaëtus melanoleucus*, *Gallus gallus*, *Gallinula chloropus* and *Ara tricolor*.—W. S.

Grinnell on a New Race of Song Sparrow.[5]—In this paper Dr. Grinnell names the Song Sparrow from San Miguel Island, *Melospiza melodia micronyx* (p. 37). It is compared with *M. m. clementae* from San Clementae and *M. m. graminea* from Santa Barbara Isl.—W. S.

Uchida on Bird Banding in Japan.[6]—Dr. Uchida visited the United States a few years ago to study the methods of bird banding employed here

[1] Descriptions of New Forms of Birds Collected by H. C. Raven in Northeast Borneo. By J. H. Riley. Proc. Biol. Soc. Washington Vol. 40, pp. 139–142. December 2, 1927.

[2] New Birds from Mexico and Panama. By Ludlow Griscom. American Museum Novitates No. 293, January 12, 1928, pp. 1–6.

[3] Additional Specimens of Fossil Birds from the Upper Tertiary Deposits of Nebraska. By Alexander Wetmore. Amer. Mus. Novitates. No. 302. Feb. 29, 1928, pp. 1–5.

[4] Bones of Birds from the Ciego Montero Deposit of Cuba. By Alexander Wetmore. ibid. No. 301, Feb. 29, 1928, pp. 1–5.

[5] The Song Sparrow of San Miguel Island, California. By Joseph Grinnell. Proc. Biol. Soc. Washington, Vol. 41, pp. 37–38. March 16, 1928.

[6] Bird Banding in Japan. By Dr. Seinosuke Uchida, Ornithologist Department of Animal Industry, Ministry of Agriculture and Forestry. Tokyo. 1928, pp. 1–10.

and essentially the same methods have now been adopted and put into operation by the Ministry of Agriculture and Forestry of the Japanese Government. This little brochure is a report of progress and shows that during the three years 1924–1926, 20717 birds have been banded with a record of 611 returns, a very encouraging beginning. There are cuts showing the style of bands used and a map of the summer and winter ranges of Japanese transients.—W. S.

Neff on Oregon Woodpeckers.—Mr. Johnson A. Neff has privately published a brochure[1] which is primarily an economic study of nine species of Woodpeckers occurring in Oregon. There is given for each species brief descriptions and ranges of the subspecies, an account of the general habits, a review of published information on the food habits, original data including both field observations and stomach analyses, and conclusions as to the economic status. The Hairy and Downy groups are highly praised, the Flickers and Lewis' Woodpecker are considered chiefly useful, the California Woodpecker slightly beneficial, and the Sapsuckers injurious. In restricted areas the Lewis' Woodpecker is a pest because of its destruction of apples and small fruits. Recommendations are given as to control of damage by the injurious, and for attracting and protecting, the useful forms. More than 380 original stomach analyses are reported upon, the publication therefore making a definite advance in knowledge of the economic status of Woodpeckers. The field work also produced interesting new information and more exact knowledge than was previously available on local behavior of the species. All in all the report is distinctly worth while.—W. L. M.

Useful Birds of Florida.—Among the progressive activities of the newly organized Department of Game and Fresh-water Fish of Florida, under the direction of J. B. Royall, Commissioner, is a much needed campaign to arouse residents of the state to an appreciation of the usefulness of birds. The two pamphlets[2] here noticed seem very well adapted to the purpose. They give in detail the records (from Biological Survey files) of birds known to feed upon the specific insect pests of important truck crops of Florida, and contain an imposing mass of definite information on the subject that must fix in the minds of citizens an impression of the importance of the bird defenders of their crops.—W. L. M.

The Ornithological Journals.

Bird-Lore. XXX, No. 2. March–April, 1928.

A Catbird Family. By Raymond S. Deck.—An intimate nest study

[1] A study of the Economic Status of the Common Woodpeckers in Relation to Oregon Horticulture, i–viii + 1–68 pp., 11 tables, 6 graphs, 16 pls., Published by the author, Marionville, Mo., 1928. Price $1.50.

[2] Leaflet No. 4, Insect Hosts Routed by the Great Bird Army, 12 pp., and Bulletin No. 4, Bird Destroyers of Insect Pests, 20 pp., 1927.

with excellent photographs. Dragon-flies were found to be the chief food of this family.

The Cactus Wren. By Margaret D. Moore.—An Arizona study.

Black-snakes and Birds. By Hugh Spencer.—Cases of devouring families of young Wrens and Catbirds and apparently a number of Bob-white eggs.

The migration and plumage notes cover the Pileated Woodpecker with a colored plate from a painting by Sutton and in the Audubon Department is an excellent sketch of a Robin's life with photographs by Arthur A. Allen.

Bird-Lore. XXX, No. 3. May–June, 1928.

Hunting Loons with a Camera. By Frank N. Wilson.—Beautiful photographs.

A Hermit Thrush and its Nest. By Robert N. Wilkin.

Canada's New Bird. By H. H. Pittman.—A Note on the Lapwing flight of December last.

Yellow Warblers and a Cowbird. By Earl Brooks.—Four Cowbird's eggs were deposited two of which were removed after the first two had been covered over. Eventually two Warblers were hatched and reared. An X-ray photograph of the three storied nest is shown.

There is an admirable life history of the Baltimore Oriole with photographs by Dr. A. A. Allen and a colored frontispiece of the Vermilion Flycatcher from a painting by Allan Brooks.

The Condor. XXX, No. 2. March–April, 1928.

What Color is the Eye of a Bush Tit. By Harold and Josephine Michener.—A bird bander's study which showed that the iris of some individuals is white and of others dark brown, a fact already mentioned by Grinnell and Storer (Animal Life in the Yosemite, p. 580).

Black Swifts Nesting Behind a Waterfall. By Emily Smith.—In Santa Cruz Mountains, California. The author makes a plea that egg collectors will leave this colony unmolested so that all may see this rare bird nesting. Dr. Grinnell in an editorial says that this is a good opportunity for collectors to show that they have an ethical code and warns them that they are on trial.

Nesting of the Black-tailed Gnatchatcher. By R. S. Woods.

Additions to the Known Avifauna of the Santa Barbara Islands. By J. R. Pemberton.—Especially good list of the birds of San Miguel.

The Tibeo-tarsus of the Fossil Hawk *Buteo typhoius*. By Alexander Wetmore.

Toxostoma curvirostris. I. Description of a new subspecies from the Lower Rio Grande. By J. Eugene Law.—*T. c. oberholseri* (p. 151) San Diego, Texas.

A New Poor-will from the Colorado River Valley. By Donald R. Dickey.—*Phalaenoptilus nuttallii hueyi* (p. 152) Bard, Calif.

Notes on Systematics of West American Birds. II. By Joseph Grinnell. —*Phalaenoptilus nuttallii dickeyi* (p. 153) is described as new covering the bird of the main part of the Lower California peninsula. *Baeolophus inornatus transpositus* (p. 154) is proposed for *B. i. affabilis* which proves = *murinus* and *Tryomanes bewickii correctus* (p. 154) for *T. b. charienturus* which = *carbonarius*. Dr. Grinnell also finds *Salpinctes proximus* = *obsoletus* and would recognize only one form of Rock Wren for Lower California except the Guadalupe form which however is only a subspecies.

The Condor. XXX, No. 3. May–June, 1928.

Where Engineer and Ornithologist Meet: Transmission Line Troubles Caused by Birds. By Harolod Michener.—Flashovers on the insulators of high power electric lines were found to be due to discharge of excrement from perching Hawks and Herons which produced the short circuit. Over $100,000 has been spent in putting up pans to protect the insulators and saw-tooth guards to prevent the perching of the birds.

Luther Everet Wyman. By Louis Bishop.

A Method of Showing Relative Frequency of Occurrence of Birds. By Jean M. Linsdale.—Lists made on 200 field days over the same area are compared and the number of times each species had been recorded is ascertained, the locality being near Geary, Kansas. The Cardinal registered 100% and the 194 species ranged down to the Hermit Thrush with 0.5 %. Charts show also the number of field days per month and the number of species seen in each month.

Notes on Systematics of West American Birds. III. By Joseph Grinnell.—The validity of the western race of the Olive-sided Flycatcher is maintained, while the Western Wood Pewee is considered to be merely a race of the eastern notwithstanding its very different note. A new race of White-crowned Sparrow is described, *Zonotrichia leucophrys pugetensis* (p. 187) Vancouver Island, a northern form of *nuttalli;* and the present practise of regarding all these birds as subspecies of *leucophrys* is endorsed.

In Field and Study, *Aeronautes saxatilis nigrior* (p. 193) is described from Salvador by Dickey and vanRossem while Swarth has a lengthy review of Taverner's paper on Red-tailed Hawks,

The Wilson Bulletin. XL, No. 1. March, 1928.

The Courtship Behaviour of Barrow's Goldeneye, By Edmund J. Sawyer.—An excellent study with three plates from sketches by the author. No mention seems to be made of Brooks' paper on the same subject, also with sketches, in 'The Auk,' 1920, p. 353.

Some Impressions of the Commoner Winter Birds of Southern Arizona. By Myron H. and Jane B. Swenk.—At Tucson with songs in musical notation.

Are Birds Decreasing in Numbers? By Althea R. Sherman.—Miss Sherman would say many are decreasing and a few increasing, and gives an interesting summary of her observations at National, Iowa, during the last 13 years, bearing on the subject.

Birds of Eastern McKenzie County, North Dakota. By Adrian Larson. —184 species listed.

Proceedings of the 14th Annual Meeting of the Wilson Club at Nashville, January, 1928.

The Oölogist. XLV. Nos. 2, 3, 4 and 5. February, March, April and May, 1928.

Pennsylvania and New Jersey nesting dates 1927. By R. F. Miller. (Feb.).

Habits of the Black Vulture in Florida. By D. J. Nicholson. (Feb.).

Nesting of the Olive-sided Flycatcher [in Ontario]. By Verdi Burtch (April.)

A Great Gull Migration [at Austin, Tex.]. By R. H. Eanes (April).

Duck Hawks at Woodstock, Vt. By D. D. Blake (May).

List of Birds found Nesting at Columbia Co., Wisc. By R. M. Barnes (May).

Bulletin of the Essex County Ornithological Club. 1927.

Birds Seen in the Nile Valley. By C. W. Townsend.

The Essex Co. Shooting Season. By J. C. Phillips.

The Ipswich River Trip. By R. Lawson, the Club list for 1927, and seven other local papers.

Bulletin of the Northeastern Bird-Banding Association. IV, No. 2, April, 1928.

The Scientific Aspects of Bird-banding. By Wm. Rowan.

Notes on the Invasion of the Northern Shrike in the Winter of 1926–27. By Charles B. Floyd.—Thirteen species of small birds were reported killed by Shrikes but the majority of individuals were English Sparrows. Most observers stated that the Shrike carried its prey in its beak but seven saw it use its claws and in three cases both were used.

The Age of Banded Birds. By M. Y. Lafranchise.—Compiled from Canadian records.

Abnormal Yellow Color of Swamp Sparrows. By E. G. Rowland.—The plumage of the first winter which was once named *Passerculus caboti*. The writer seems not to be familiar with Dr. Dwight's 'Sequence of Plumages and Moults of the Passerine Birds of New York' which is absolutely essential to anyone studying plumages.

Evening Grosbeak Recoveries. By M. J. Magee.—Birds banded in Michigan have been caught in New England but not all of the same flock travel in the same direction.

E. H. Forbush. By J. B. May.—A biographical sketch.

On the Meaning of the Winter Time Yellow Patches on Adult male Goldfinches. By C. L. Whittle.—Mr. Whittle has now definitely shown that on the birds he examined these yellow feathers were molting in on February 25, but he states that apparently no further molt occurs for

weeks. Might it not be possible that these patches are replacements of lost plumage, rather than the beginning of the prenuptial molt?

The Murrelet [Mimeographed Journal] IX, No. 1. January, 1928.

Birds Observed at Westport, Washington. By D. E. Brown.

A number of local Washington records in 'General Notes.'

The Gull. 10, Nos. 1, 2 and 3. January, February and March, 1928.

Mainly local notes for the vicinity of San Francisco.

A Vacation Experience. By Mrs. G. E. Kelly.—In the Sierras (Jan.).

Census of Birds' Nests in the Music Concourse, Golden Gate Park. By J. Mailliard.—Nineteen nests, Linnet [House Finch], English Sparrow and Nuttall's Sparrow (Feb.).

Census of Water Fowl at Lake Merritt, Oakland, Calif. By Joseph Dixon.—Seventeen species 1320 individuals (Mar.).

The Ibis. (12th Series) IV, No. 2. April, 1928.

Field Notes on the Birds of Vancouver Island. By Charles E. Alford.—Observations during four years residence.

Birds of the Gyantse Neighborhood, Southern Tibet. By Frank Ludlow. Part III.

Some Notes on the Habits of Palaearctic Migrants while in Egypt. By R. E. and W. M. Moreau.—31 species were never heard to sing in their winter quarters while 28 were heard to sing but only 10 at all frequently.

Field Notes on a collection of Birds from Uganda. Part II. By H. F. Stoneham.

On the Birds Collected during the Third Expedition to French Indo-China. By J. Delacour with notes by P. Jabouille and W. P. Lowe. Part II.

The Display of Wilson's Bird-of-Paradise. By J. M. Winterbottom.—Specimen in the London Zoo.

Sixth Report of the Committee on Nomenclature of British Birds.

Bulletin of the British Ornithologists' Club. No. CCCXXI. February 25, 1928.

Chlorura hyperythra malayana (p. 72) Kinabalu, is described by H. C. Robinson.

Cyornis rufigastra indochina (p. 73) Indo-China, by F. N. Chasin and C. Boden Kloss.

There is further discussion on the method of the Cuckoo in depositing its egg.

Bulletin of the British Ornithologists' Club. No. CCCXXII. March 29, 1928.

Mr. Gregory Mathews proposed the genus *Sipodolus* (p. 83) for *Todopsis wallacei* Gray, and describes *Hylochelidon nigricans papua* (p. 83) from Kei Islands, Moluccas.

Dr. Hartert proposed *Sphenocercus sphenurus oblitus* (p. 83) Hainan and Mr. N. B. Kinnear, *Hypocharmosyna placentis intensior* (p. 84) from Batchian.

British Birds. XXI, No. 10. March 1, 1928.

Ornithological Report from Norfolk for 1927. By B. B. Riviere.

Birds Observed in the North Sea, 1927. By David K. Wolfe Murray.—Notes for every month while with the North Sea fishing fleet.

Obituary: J. E. Harting.

An Unrecorded Somerset Heronry. By Stanley Lewis.

British Birds. XXI, No. 11. April 2, 1928.

Notes on the Food of Certain Birds. By Charles Elton.—Observations on nine species.

George Shield 1804–1880. By Hugh S. Gladstone.

Recovery of Marked Birds. (continued in May.)

There are also an account of the irruption of Crossbills in the winter of 1927–28 and a list of incubation and fledgling periods of British birds.

British Birds. XXI, No. 12. May 1, 1928.

The Oxford Trapping Station. By E. M. Nicholson and M. W. Willson.—Illustrating methods of bird-banding.

The Avicultural Magazine. (Fourth series) VI, Nos. 3, 4 and 5. March, April and May, 1928.

Shelldrakes and Surface-feeding Ducks (March) and Teal and Shovellers (April) by J. Delacour.—With colored plates of several species.

My Trogons. By Karl Plath. (March).—*Prionotelus temnurus* in his aviary in Chicago.

Food and Colour Retention. By Godfrey Davis. (April).—Interesting discussion regarding the effect of different foods on coloration of feathers.

The New Bird House at the London Zoo. By D. Seth Smith (May).

Mendelian Inheritance (?) in Budgerigars. By J. Bradshaw (May).

Breeding of Blue Geese in Canada. By G. H. Corson.—Captive birds.

The Oölogists' Record. VIII, No. 1. March, 1928.

Oölogy and Biology. By Julian S. Huxley.—The suggestion is made that egg collectors could furnish valuable data to the biologist if they would take the trouble. An example is given in the relation of weather to the fertility of birds and the writer states that if a collector would keep a record of the sort of weather and the temperature at the time the sets were complete and keep this up for several years, over the same area, data of the utmost importance would be secured.

Birds of the Muskegs [of Alberta]. By A. D. Henderson.—Notes on nests of several species found by the writer, R. C. Harlow and W. Rowan, including the Dowitcher and Bohemian Waxwing.

On the Nesting of the Common Gull (*Larus canus canus*) in Shetland. By Wm. E. Glegg.—With admirable photographs.

Notes on the Nesting of Some Rarer Species. By R. F. Meiklejohn.—Northern Europe and Corsica.

Notes on a Few Days Spent in Brazil and Uruguay. By B. Guy Harrison.—

Notes on an Oölogical Excursion to the Magdalen Islands. By H. W. Holben.

The South Australian Ornithologist. IX. Part 5. January, 1928.

The Butcher-Bird (*Cracticus torquatus*) and the Striped Honeyeater (*Plectorhyncha lanceolata*) nesting in company. By A. M. Morgan.—Both nesting in the same tree only a few feet apart.

Also several local lists from various parts of Australia.

Revue Francaise d'Ornithologie. (Series II) XX, No. 225. January–February, 1928. [In French.]

Some Birds of the Bay of St. Brieuc. By R. Reboussin.

Note on the Anatomy of the Masticator Muscles of the Crossbill. By R. Hemery.

Obituary of Count Otto von Zedlitz. By L. Lavauden.

Revue Francaise d'Ornithologie. (Series II) XX, No. 226. March, 1928.

Fragments of Ornithological Bromatology.—Notes on the Food of some Indiginous Birds. By H. Heim de Balsac.—Twelve species considered.

The Heronry of Fontainebleau, By H. Dalmon.

The Birds of the Sea. By Paul Arné.—On the coast of Landes and the Lower Pyrenees during the tempest of October 24–26, 1925,

The Woodcock and Flight against the Wind. By M. de la Fuye.

L'Oiseau. VIII, No. 11. November, 1927. [In French.]

Flamingos and Screamers. By J. Delacour.

Notes on Foxwarren. By J. Delacour.—The estate of Mr. A. Ezra and his aviaries, in Surrey, England.

Third Expedition to Indo China. By J. Delacour and P. Jabouille.—Notes on some Indochina birds.

Rapid Journey of an Ornithologist through North Tunis, Constantine and Southern Algeria. By Rene d'Abadie.—Brief mention of species observed. (Completed in December issue.)

Le Gerfaut. 17, Fasc. IV. 1927. [In French.]

Entirely devoted to local Belgian notes.

Der Ornithologische Beobachter. XXV, Nos. 6, 7 and 8. March, April and May, 1928. [In German and French.]

The Migration Route of the Laughing Gull from Uznacherried. By A. Schifferli.—A bird banding report (March).

Report of the Swiss Bird Station at Sempach for 1926. By A. Schifferli. (Concluded April and May.)

Journal für Ornithologie. LXXVI, Heft 2. April, 1928. [In German.]

The Elburs Expedition 1927. By Gerd Heinrich.—The Elburs Mts. in northern Persia south of the Caspian Sea. A report on the birds obtained follows the account of the expedition, and is by Dr. E. Stresemann. 172 species are listed and the following are described as new: *Pica pica laubmanni* (p. 342) Balutschistan; *Pyrrhocorax pyrrhocorax pontifex* (p. 343) Gilan, Persia; *Sturnus vulgaris heinrichi* (p. 345) Masanderan, Persia; *Motacilla alba transcaspica* (p. 362) Astarabad, Persia; *Sylvia atricapilla dammholzi* (p. 377) Gilan, Persia; *Sylvia communis rubicola* (p. 378) Turkestan.

A Contribution to the Biology of the Barn Owl. By B. and W. Schneider —Including list of prey.

The Appearance and breeding circumstances of the Caspian Tern in Estland. By M. Harms.

Ornithologische Monatsberichte. 36, No. 2. March, 1928. [In German.]

The Distribution of the Nightingale and the Thrush-Nightingale. By W. Emis.

Obituary of Johann Büttikofer. By E. Schwartz.

New Forms from North Kansu. By E. Stresemann.—*Garrulus glandarius kansuensis* (p. 41), *Parus major kansuensis* (p. 41), *Aegolius tengmalmi beikianus* (p. 41).

Migration Route of Falco vespertinus through Western Europe in September, 1927.

The Crossbill Invasion of 1927.

New Races of Birds from the Small Sunda Islands. By B. Rensch.—*Pericrocotus speciosus siebersi* (p. 47) Tali, *Ornithocichla everetti sumbawana* (p. 48) Sumbawa, *Gracula venerata mertensi* (p. 48) West Flores. *Monachalcyon fulgidus gracilirostris* (p. 48) West Flores.

In the shorter notes are two new forms, *Erithacus rubecula tataricus* (p. 52) Gov't. Orenburg, Russia, by H. Grote; and *Ninox scutulata javanensis* (p. 54) Java, by E. Stresemann.

Ornithologische Monatsberichte. 36, No. 3. May, 1928. [In German.]

Development of Megapodius and Oxyura in the Egg. By E. Stresemann and O. Meyer.—Concludes that fermentation of vegetable matter is not the cause of the development of the embryo and that the burying of the egg in the earth is all that is necessary to carry on the process.

Siberian Duck Migration—Through India. By H. Grote.

New Forms from East Africa, Aldabra and Madagascar. By H. Grote, —*Alcippe abyssinica micra* (p. 77) West Usambara; *Pogoniulus pusillus eupterus* (p. 78) Kenya Colony; *Falco newtoni aldabranus* (p. 78) Aldabra; *Tyto alba hypermetra* (p. 78) Madagascar.

New Races of Birds from the Small Sunda Islands. By B. Rensch. *Dicaeum sanguinolentum rhodopygiale* (p. 80) West Flores, and *Cyanops armillaris baliensis* (p. 80) Bali.

In the shorter notes L. Shulpin renames *Emberiza spodocephala flaviventris, E. s. extremi-orientis* (p. 82) and E. Stresemann describes *Pseudopodoces humilis saxicola* (p. 82) North Kansu.

Beiträge zur Fortpflanzungsbiologie der Vögel. Jahr. 4, No. 2. March, 1928. [In German.]

The Star of the Blue-throat. By E. Christoleit.

Contribution to the Biology of the Wryneck. By H. Siewert.

Remarks on the Nehrkorn Catalogue [of Eggs]. By M. Schönwetter. (Continued in No. 3.)

Collocalia esculenta linchi (Horsf.). By A. Spennemann. (Concluded in No. 3).—Nest and eggs.

Beiträge zur Fortpflanzungsbiologie der Vögel. Jahr. 4, No. 3. May, 1928. [In German.]

On the Nesting Habits of *Charadrius alexandrinus.* By F. Dietrich,

Supplements to Hartert's Work on the Breeding time of North African Birds. By F. C. R. Jourdain,

Observations on the Golden-eye. By P. Bernhardt.

On the Part of the Male Duck in Caring for the Brood. By L. Schuster.

Aquila. Vol. XXXII–XXXIII. 1925–1926.

This bulky number of 328 pages is devoted entirely to the ornithology of Hungary. There are some ninety articles and many short notes. Each paper is printed in Hungarian and in German.

The most important articles perhaps are the tabulation of migration data for the years 1924 and 1925 and the report on bird banding for the same period. There are also papers on food habits, bird reservations rare occurrences, etc.

El Hornero. IV, No. 1. December, 1927. [In Spanish.]

Description of a Collection of Eggs of Argentine Birds, By C. H. Smyth.

Additions and Corrections to the 'List of the Birds of Uruguay.' By J. Tremoleras.

Second List of Birds Collected in the Riberena Region of Buenos Aires. By J. A. Pereyra.

Distinct Phases of Plumage Coloration in the Merganetta of Northeast Argentina. By R. Dabbene.

Notes on the Food of Birds. By R. O. Aravena.

Investigation of Blood Parasites in Birds. By S. Mazza, E. Deautier and A. Steullet.

The Rheas. By W. H. Hudson—Translated and Annotated by A. Steullet and E. Deautier.

Numerous notes on Argentine Birds etc, and a photograph of the members of the Ornithological Society of La Plata.

Tori. V, No. 25. March, 1928. [In Japanese.]

The Study of Mutations among Birds. By M. U. Hachisuka.—With a plate of *Phasianus colchicus* mut. *tenebrosus* Hachisuka.

Notes on a Collection of Birds from southern Sakhalin. By Y. Yamashina. Partly in English.

Birds Seen at Nara and Kyoto. By K. Enomoto.

On the Manchurian Crane at Kushiro. By H. Saito.

On the Food of Quails in Central Korea, By Y. Kuroda.

Hawaiian Feather Work and Ornithological Recollections of Hawaii. By M. U. Hachisuka.

Notes on Some Oriental Birds, By M. U. Hachisuka.—[In English].

A new genus is described *Dicrachibia* (p. 23) for *D. menagei.*

Some New Additions to the Avifauna of Formosa and the Island of Botel Tobago. By Nagamichi Kuroda. [In English]. *Otus sunia botelensis* (p. 26) is described as new from the latter.

Uragus.[1] Vol. 3, 1928, No. 1. [In Russian.]

The northern Siberian Redpoll. By V. A. Hachlow.

The little Crake (*Porzana parva* Scop.) on the Kulundinsk Steppes. By A. P. Welishanin.

Contributions to the Ornithological Fauna of the Barnaul Region. By G. A. Welishanin.

On *Lanius cristatus* in southern Ussuri Land. By Hans Iohansen.

Nest and eggs of *Locustella fasciolata* Gray. By Hans Iohansen.

The White Egret in the Semipalatinsk and Ust-Kamenogorsk. By W. A. Selewin.

On the Ornithological Fauna of Kamtschatka. By K. A. Worobiew.

Observations on the Departure and Migration of the Birds near Wjatka in the year 1927. By P. Plesskii.

Remarks on the Bird List of Southern Ussuri Land. By Hans Iohansen.

Passer domesticus sibiricus subsp. nov. By V. A. Hachlow.

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[1] Journal of the Siberian Ornithological Society. Edited by Prof. V. A. Hachlow and Dr. Hans Iohansen, University, Tomsk, Siberia. Foreign Agents: R. Friedlander & Son, Karlstrasse 11, Berlin, N. W. 6, Germany. Price, 4 rubles ($2) a year. [Review contributed by Dr. T. S. Palmer.]

Ornithological Articles in Other Journals.

Hantzsch, Bernard. Contribution to the Knowledge of the Avifauna of Northeastern Labrador. (*Canadian Field Naturalist*, January, 1928.)—Continued in February issue.

Mousley, Henry. Notes on the Birds, Orchids, Ferns and Butterflies of the Province of Quebec, 1927. (*Canadian Field Naturalist*, February, 1928.)

Evans, William. A List of the Birds of the Forth Area. (*Scottish Naturalist*, January–February, 1928.)

Wild, Oliver H. The Increasing Scarcity of the Land Rail or Corncrake. (*Scottish Naturalist*, January–February, 1928.)

Stewart, Walter. Studies of Some Lanarkshire Birds. The Carrion Crow. (*Scottish Naturalist*, January–February, 1928.)—Other species in the next issue.

Hamilton, David. The Tree Sparrow around Edinburgh. (*Scottish Naturalist*, March–April, 1928.)

Tait, John. The Courtship and Breeding of the Fulmar. (*Scottish Naturalist*, March–April, 1928.)

Grimes, S. A. The Loggerhead Shrike. (*The Florida Naturalist*, April, 1928.)

Longstreet, R. J. Check List of the More Common Florida Birds. (*The Florida Naturalist*, April, 1928.)

Sutton, George Miksch. A Fair Deal for the Hawks and Owls. (*Outdoor America*, January, 1928.)

von Schriltz, Guy. Robins and Ruminations. (*American Forests and Forest Life*, April, 1928.)

Stillman, Albert E. Nesting of the Band-tailed Pigeon. (*American Forests and Forest Life*, May, 1928.)

Serrill, W. J. A Morning with the Warblers. (*General Magazine, Univ. of Penna.*, January, 1928.)

Headstrom, B. R. Behavior of Mallard Ducks. (*Science*, March, 23 1928.)—Swimming to keep ice from forming on a pond.

Iron, V. K. Eighth Biennial Report of the Department of Conservation of Louisiana.—Many notes on game birds.

Tolmacev, A. On the Ornithological Fauna of the Island of Kolgouyev. (*Ann. Muz. Zool. Acad. Sci. Urss.*, 1927.)

Stegmann, B. The Eastern palearctic Magpies and their Distribution. (*Ann. Muz. Zool. Acad. Sci. Urss.*, 1927.)—*Pica p. jankowskii* (p. 380) *P. p. amurensis* (p. 382) and *P. p. alashanica* (p. 381) are described as new.

CORRESPONDENCE.

Molt of the Ruff.

Editor of 'The Auk':

In the April number of 'The Auk' Mr. Rodolphe Meyer deScheuensee believes (p. 217) that *Creatophora carunculata* presents "the first instance known of a bird which has a bare head at one season of the year, and is able to produce feathers upon it at another, and then shed them again."

That is not the case. A well known Palaearctic wader—having also more than 75 years standing on the American list—*Pavoncella pugnax* (L.)—presents, in the males only, the same peculiarity. In autumn and winter all Ruffs are distinguishable from Reeves [their females] by their larger size only, and are like all middle-sized Sandpipers (they are not Tattlers, be it said in passing) all the head is feathered, legs of all specimens are of the same dark olive-green coloring.

But in spring and early summer the males have long and variously colored "ruffs," and "ears," their legs are also of different colors. Among birds shot at the same place on the same day you can find legs nearly black, olive-green, neutral gray, pale flesh-color, pale yellow, orange, and rosy-red.

Feathers of all the fore part of the head are shed and the skin of the forehead, lores and cheeks becomes carunculated and presents different colors sometimes but rarely identical with the leg coloring of the same specimen, but mostly quite different.

I may add that females in spring differ somewhat *inter se* in coloring of their legs and the feathers of the mantle, very much more than do any other waders but far less than do their males.

After breeding time is over the males molt their "ruffs" and "ears" and grow the usual feathers on their faces while their legs (and bills) resume their usual winter coloring.

These birds were very common on the shores of Matzal and Iapsal Bays of the Baltic, on the middle Volga, on Kolguev and on the delta of Kolyma and I observed and shot them during the last 43 years hundreds and hundreds of times and had about two hundred in my collection so that I can be sure of the facts.

Yours truly,

SERGIUS A. BUTURLIN.

Moscow, Russia, May 26, 1928.

Correction.

Editor of 'The Auk,'

In the notice of Luther E. Wyman's death, on pages 266 and 267 of the April 'Auk,' the statement is made that he "attended Knox College at Galesburg, Illinois, where he was graduated in 1893." Having become

acquainted with Mr. Wyman while residing in Los Angeles a few years ago, I knew him to be a graduate of Lombard College, also at Galesburg. To verify this, the Lombard College office advises me to-day that he was graduated in 1892. Wyman never attended Knox. The location of both colleges in the same city might easily confuse a biographer. I beg to offer this correction believing it would be desired to accordingly change the Union's record.

Very truly yours,

HAROLD M. HOLLAND.

The Galesburg Club, Galesburg, Ill.

NOTES AND NEWS.

WILLIAM LEON DAWSON, a Member of the American Ornithologists' Union, died of pneumonia in Columbus, Ohio, on April 30, 1928. He was in the prime of life and seemed to be in perfect health up to the 23rd of April. Mr. Dawson was born in Leon, Iowa, on February 20, 1873 and was thus in his fifty-sixth year.

From earliest boyhood he was passionately fond of birds and his journals show painstaking and systematic records of his observations from his sixteenth year. He was educated for the Congregational ministry and preached for four years but was compelled by ill health to abandon the pulpit in 1902 while he was pastor of the North Congregational Church of Columbus, Ohio.

He turned at once to ornithology and began the preparation of a work on 'The Birds of Ohio,' which was published in 1902–03. Following this he removed with his family to Seattle, Washington, and in 1909 'The Birds of Washington' appeared in conjunction with J. H. Bowles. This work at once attracted attention as Mr. Dawson had a peculiar ability in the preparation of handsome books. Removing to California, soon after, he conceived the preparation of 'The Birds of California' on a scale to surpass anything of the kind that had yet been published. He set about securing photographs of the birds for the purpose of illustration, and soon became one of the most successful of bird photographers. This notable work, in four volumes, profusely illustrated with halftones and color plates from paintings by Allan Brooks, appeared in 1923 and has been universally recognized as the finest work on the birds of any state that has been published.

Mr. Dawson's interest in oölogy led to the establishment in Santa Barbara, Calif., of the Museum of Comparative Oölogy but after a few years the scope of the museum was broadened and Mr. Dawson's connection with it severed. While at Santa Barbara he laid plans for a work on the birds of Mexico and a successful season was spent in the study of Mexican birds under the auspices of the museum but the project was later abandoned.

Returning to his old home in Ohio he then began preparations for a new edition of the 'Birds of Ohio' on the lines of 'The Birds of California' and had the photographic material largely prepared, expecting to begin the writing of the text during the coming year. Simultaneously he was securing photographs and field notes on the birds of Florida for a work to follow that on Ohio birds and had been spending three months each winter in Florida for this purpose.

Mr. Dawson leaves a wife, Frances E. Dawson, who for thirty-three years has been his secretary and general assistant; two sons, William O. Dawson, a photographer, and Giles E. Dawson, an instructor in Western Reserve University, and a daughter, Barbara.—W. S.

COUNT OTTO VON ZEDLITZ UND TRÜTZSCHLER, a Corresponding Fellow of the American Ornithologists' Union since 1923, died suddenly Dec. 4, 1927, after a brief illness, at Varberg, near his home, Tofhult, in southern Sweden. He was born March 23, 1873, at Gute Schwentnig near Zobten, in Silesia, on an estate which had been in the possession of the family since 1734. He attended school in Breslau and served a few years as a lieutenant in the 'Leihkurassieren' in that city.

From 1910 until the outbreak of the great War he spent much of his time in travel, in expeditions from Africa to northern Europe and the Arctic. In the summer of 1900 he accompanied Dr. Arthur Berger and Capt. J. Roth on a hunting trip to Norway and Spitzbergen. In 1904, 1905 and 1906 he made three expeditions to Tunis, the results of which appeared in the 'Journal für Ornithologie' in 1909. In 1908 and 1909 he conducted ornithological explorations in Eritrea and the adjoining regions of Abyssinia. In the following year he visited Spitzbergen for the second time; in 1911 made a trip to the Sinai Peninsula and at the same time sent his collector, C. W. Muller, to southern Somaliland; finally in the spring of 1913 he went to Algeria, where he met Lord Rothschild and Dr. Ernst Hartert. During the War he was stationed on the east front from 1915 to 1918, and the results of his observations appeared in a paper in 'The Avifauna of the Pripet Marshes.'

After the war he removed to Sweden where in the Province of Västergötland he took up his residence at Tofhult which remained his home for the remainder of his life. His collection of 7481 birds was presented to the National Museum in Stockholm where it forms one of the units of the National collection (See Auk, 1926, p. 445).

Count Zedlitz's publications appeared mainly in the 'Journal für Ornithologie' where he published the results of most of his expeditions, but he contributed also to many other journals, including the 'Ornithologische Monatsberichte,' 'Fauna och Flora,' 'Revue Francaise d'Ornithologie,' the 'Proceedings of the 5th and 6th International Congresses' and others. In recognition of his work he was elected to office in the Deutsche Ornithologische Gesellschaft in 1915 and 1924, and he was made an Honorary Member of the Societe Ornithologique de France and the Verein Schlesischer Ornithologen. A more extended notice of his work, from which these facts have been obtained, may be found in the 'Journal für Ornithologie,' 1928, pp. 231–235.—T. S. P.

DR. JOHANNES BÜTTIKOFER, a Corresponding Fellow of the American Ornithologists' Union, elected in 1886, died at Bern, Switzerland, June 24, 1927, at the advanced age of 77. Born at Rahnfluh in the Canton of Bern, August 9, 1850, he received his education at the Swiss capital but gained his fame entirely in foreign lands.

He had a strong taste for natural history and at the age of 29 became zoological assistant to Professor Hermann Schlegel, one of the foremost zoologists of Europe, then at the height of his fame and widely known

as Director of the Museum of Natural History at Leyden, Holland. Büttikofer's activity extended over a period of 45 years divided into two parts of which the first—18 years—was spent at the Leyden Museum followed by 27 years at Rotterdam as Director of the Zoological Gardens. A year after receiving his appointment at Leyden he was detailed with G. F. Sala to undertake a zoological expedition to Liberia. Two years later, in 1881, he returned much impaired in health, his companion having died the previous year.

Shortly after the death of Professor Schlegel, early in 1884, Büttikofer was appointed Conservator of the Ornithological Department of the Leyden Museum and during the decade in which he held this position he published a number of papers based on his own field work and that of other collectors of the Museum. In 1886 accompanied by F. X. Stampfli he made a second expedition to Liberia, returning a year later ill with malaria but leaving his assistant who returned subsequently with considerable collections. Later, with Max Moret as assistant, he visited Borneo and spent about nine months, from November 1893 to July 1894, traversing the island from east to west as zoologist of an expedition in charge of Dr. A. W. Nieuwenhuis. A report of the 'Zoological Results of the Dutch Scientific Expedition to Central Borneo' relating to birds and including notes on 269 species by Büttikofer appeared in the 'Notes of the Leyden Museum,' in 1900 (XXI, pp. 145–276). While connected with the Museum Dr. Büttikofer published about 45 papers chiefly in the 'Notes of the Leyden Museum' and also a popular account of his travels in Liberia entitled 'Reisebilde' which appeared in two volumes in 1890. During his directorship of the Zoological Gardens at Rotterdam administrative duties occupied most of his attention but he published a few contributions in 'Ardea.' Upon retiring from his post at Rotterdam he returned to the land of his nativity and passed his remaining days at his old home in Bern. His activities are commemorated in the names of several birds of Liberia and the East Indies, including *Accipiter büttikoferi* Sharpe and *Œdicnemus büttikoferi* Reichenow, from Liberia; *Cyrtostomus büttikoferi* Hartert, from the Lesser Sunda Islands, and *Rhipidura büttikoferi* Sharpe, from Dammer Island in the Banda Sea.—T. S. P.

Henry Luke White, a Corresponding Fellow of the American Ornithologists' Union, elected in 1920, died at his home Belltries, Scone, New South Wales, May 30, 1927 at the age of 67. He was the son of Francis White of Edinglassie Estate, Muswellbrook, and was born at Anambah, West Maitland, N. S. W., May 9, 1860. His grandfather James White was one of the early settlers and went to Australia as sheep manager of the Australian Agricultural Co. at Port Stephens. Henry White received his education at Calder House, Redfern near Sydney, and in Mr. Belcher's school at Goulburn. He also studied surveying and passed his final examinations in 1884. Three years later he married a daughter of the late E. S. Ebsworth of Sydney.

In later years White became a pastoralist on a large scale and a patron of various local, public and charitable projects. While he had little time for collecting birds himself he sent collectors into little known parts of Australia and in this way secured not only rare specimens but much valuable information regarding little known species. He was a patron of Australian ornithology in the broadest sense of the term and brought together a large collection of birds and a collection of Australian eggs that was said to be the finest in the world. These collections were always open to students and those interested in ornithology. In 1917 he presented his collection of over 8000 bird skins to the National Museum in Melbourne. He was a member of the British Ornithologists' Union and an honorary member and patron of the Royal Australasian Ornithologists' Union to which he gave $5,000 to further its scientific work and a complete set of John Gould's 'Birds of Australia' for its library. He was also widely known as a philatelist and was a Fellow of the Royal Philatelic Society of London. His collections of the stamps of New South Wales, Queensland and Western Australia valued at $250,000 were presented to the Public Library of New South Wales.

His contributions to ornithology are commemorated by several birds named in his honor including *Falcunculus whitei* and several subspecies. Would that there were more patrons of ornithology like Henry L. White, not only in Australia, but in other parts of the world!—T. S. P.

Records of land birds coming aboard ships at sea are by no means uncommon but evidence that birds cross the Atlantic in this way is difficult to obtain. The following note in 'British Birds' for April, 1928, (Vol. XXI, p. 282) was contributed by Charles E. Alford, who describes an interesting case as follows: "On October 9th, 1927, the S. S. "Alaunia" started on her westward voyage from Southampton, and on the same day four Greenfinches (*Chloris c. chloris*) flew on board. One of them disappeared during the voyage, but three remained on the ship until the shores of Newfoundland were sighted, when they apparently flew ashore. They roosted during the voyage on a band round the funnel, on the lee-side, being fed by my informant (a passenger on the vessel) and provided with water by one of the stewards. The weather throughout the voyage was unusually fine."

The Royal Australasian Ornithologists' Union which held its 26th Annual Congress at Perth, Western Australia, in October, 1927, has recently announced that the Annual Meeting in 1928 will be held in South Australia.

E. W. Gifford of Oakland, Calif., began breeding foreign Doves and Pigeons in 1908 and since 1923 has limited his collection to rare species, particularly Partridge Pigeons and Quail Doves. In 'The Auk,' for July, 1925 (pp. 388–396), he published an interesting account of the

Gray-hooded Quail Dove (*Gallicolumba rubescens*) in captivity and he has recently contributed to 'Parks and Recreation for' March–April, 1928 (pp. 296–299), his experiences with several other species. His collection now comprises the following 7 species: Grayson's Pigeon (*Zenaidura graysoni*) from Socorro Island, Revillagigedo group; Golden-heart (*Gallicolumba helviventris*), a rare relative of the Bleeding Heart, from New Guinea; the White-fronted Amethyst (*G. kubaryi*) from the Caroline Islands; the Black-fronted Amethyst (*G. jobiensis*) from New Guinea; the Buff-hooded (*G. xanthonura*) from the Marianne Islands; the Gray-hooded (*G. rubescens*) from the Marqueses Islands; and the Blue-headed Partridge Pigeon (*Starnoenas cyanocephala*) from Cuba.

THE Howard Smith Paper Mills, 407 McGill St., Montreal, Canada, have published a most attractive calendar with reproductions of twelve of the paintings of the birds of Eastern Canada by Major Allan Brooks which form part of the Wallace Havelock Robb Collection in the Royal Ontario Museum of Zoology at Toronto. The reproduction is remarkably well done. The species represented are the Baltimore Oriole, Ruby-throated Hummingbird, Goldfinch, Scarlet Tanager, Loon, Ruffed Grouse, Blue Jay, Chickadee and White-breasted Nuthatch, Screech Owl, Flicker, Bluebird and Kingfisher. The plates are also issued separately suitable for framing at one dollar the set.

In noticing a recent work by Mr. Robb in the April 'Auk' his name appeared through an error "William" Havelock Robb, and we take this occasion to make the correction.

MR. ALFRED L. BAILEY formerly of the Field Museum staff has been for some months Director of the Chicago Academy of Sciences.

A NEW sportsmen's organization the "American Wild Fowlers" was founded in May, 1927. Its aims are to interest all persons in the intelligent preservation and increase of migratory Wild Fowl in order that legitimate sport, recreation and a game food supply may be insured for the present and future; to support the Biological Survey and to assist and coöperate with it and with State game agencies in all policies approved by the Executive Committee of the "Wild Fowlers." Mr. John C. Phillips is president and Nash Buckingham is executive secretary. The headquarters are in Washington and the board of fifteen directors represent all sections of the United States, with Charles Sheldon as chairman of the Executive Committee. The Association is financed on a three-year basis and will not attempt to enroll a large membership but welcomes correspondence from all interested in the welfare of Ducks and Geese. Information is especially desired on shrinkage of water surface through drainage, etc.; existance of all legitimate shooting clubs, data on factors affecting duck supply,—disease, oil-pollution, over-shooting, etc. and worth while statistics showing the actual kill of birds at various points.

THE friends of Mr. Edward Howe Forbush tendered him a dinner at the University Club in Boston, Mass., on April 24, 1928, on the occasion of his seventieth birthday. About 125 were in attendance, representing many organizations interested in ornithology and in the conservation of wild life. Mr. John L. Saltonstall of the Associated Committee for Wild Life Conservation presided, and Hon. Herbert Parker was toastmaster. Addresses were made by Dr. Arthur W. Gilbert, commissioner of Agriculture of Mass., Dr. Glover M. Allen, president of the Nuttall Ornithological Club, Dr. Witmer Stone, Vice President of the Academy of Natural Sciences of Philadelphia, and Dr. Alfred O. Gross of Bowdoin College.

DR. NAGAMICHI KURODA enroute to the International Congress on Bird Protection at Geneva, visited most of the ornithological centers of America and examined the collections both in the museums and the zoological gardens.

ARRANGEMENTS for the Charleston Meeting of the Union are rapidly approaching completion. The meeting will be held the week of November 19, with the first scientific session on the morning of the 20th. Headquarters will be at the Francis Marion Hotel, and scientific meetings at the Charleston Museum.

Plans have been made to visit localities made famous by the work of Audubon and Bachman as well as such points of interest as the Magnolia Gardens, and there will be one water trip. The local committee emphasizes the fact that the historical association of the localities to be visited is considered more than the birds to be seen, as November is not a good month for birds, but the winter bird life of the South will, we feel sure, amply repay ornithologists from the north, aside from the abounding historic interest of the Charleston region. Let every one prepare to make the trip!